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(FILE 'HOME' ENTERED AT 21:59:15 ON 28 MAR 2008)

FILE 'REGISTRY' ENTERED AT 22:00:43 ON 28 MAR 2008

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 STR



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=> s l1 full

FULL SEARCH INITIATED 22:01:10 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 6578 TO ITERATE

100.0% PROCESSED 6578 ITERATIONS

158 ANSWERS

SEARCH TIME: 00.00.01

L2 158 SEA SSS FUL L1

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178.99

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=> s 12/prep
      521 L2
      4549398 PREP/RL
L3      90 L2/PREP
          (L2 (L) PREP/RL)

=> s 13 and py<=2003
      23980118 PY<=2003
L4      79 L3 AND PY<=2003

=> s 14 and aluminum metal
      1027344 ALUMINUM
      1819660 METAL
      2219 ALUMINUM METAL
          (ALUMINUM(W)METAL)
L5      0 L4 AND ALUMINUM METAL

=> s 14 and metallic aluminum
      288098 METALLIC
      1027344 ALUMINUM
      704 METALLIC ALUMINUM
          (METALLIC(W)ALUMINUM)
L6      0 L4 AND METALLIC ALUMINUM

=> d 14 1-79 bib abs
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L4  ANSWER 1 OF 79  CAPLUS  COPYRIGHT 2008 ACS ON STN
AN  2003:752416  CAPLUS
DN  140:406839
TI  Metallated triphenylphosphinimine complexes
AU  Wei, Pingrong; Chan, Katie T. K.; Stephan, Douglas W.
CS  Department of Chemistry & Biochemistry, University of Windsor, Windsor,
    ON, N9B3P4, Can.
SO  Dalton Transactions (2003), (19), 3804-3810
    CODEN: DTARAF; ISSN: 1477-9226
PB  Royal Society of Chemistry
DT  Journal
LA  English
OS  CASREACT 140:406839
AB  Transmetalation of N-substituted 2-lithiotriphenylphosphine imine
    complexes with boron, aluminum and gallium halides afforded corresponding
    o-metallated triphenylphosphine imide complexes. The reagent
    [(o-C6H4PPh2NSiMe3)Li]2·Et2O (1) reacted with BCl3 affording
    (o-C6H4PPh2:NSiMe3)BCl2 (4). Similarly reaction of 1 with Me2AlCl
    resulted in a 1:1 mixture of (o-C6H4PPh2:NSiMe3)AlMe2 (5) and
    (o-C6H4PPh2NSiMe3)Al(Me)Cl (6) while the analogous reaction of 1 with
    GaCl3 gave (o-C6H4PPh2:NSiMe3)2Ga(o-C6H4PPh2NH) (7). The analogous compound
    [Li(o-C6H4PPh2:NPh)]2·Et2O (2) was used to make
    (o-C6H4PPh2:NPh)GaCl2 (8), while reaction of 2 with Me2AlCl gave a mixture
    of [(o-C6H4PPh2:NPh)AlCl2] (9) and the salt [(o-C6H4PPh2:NPh)2Al][AlMeCl3]
    (10). The compound 2 also reacts with PdCl2(COD) affording
    [Pd(o-C6H4PPh2:NPh)(μ-Cl)]2 (11) and [Pd(o-C6H4PPh2:NPh)2] (12).
    Similarly, the complexes [Ni(o-C6H4PPh2:NPh)2] (13) and
    [Ni(o-C6H4PPh2:N(3,5-C6H3Me2))2] (14) were prepared. The comps. 4-14 were
    structurally characterized by x-ray crystallog.
RE.CNT 38  THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
          ALL CITATIONS AVAILABLE IN THE RE FORMAT
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L4  ANSWER 2 OF 79  CAPLUS  COPYRIGHT 2008 ACS ON STN
AN  2003:267298  CAPLUS
DN  139:6977
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TI Salts of the Cation [(Cp*Cr)4(μ -Cl)3(μ -CH2)3AlMe]+ with the Oxo- and Methine-Based Aluminum Anions [(Me2Al)2(μ -CH)(AlCl2Me)2]- and [(Me2Al)1(μ 3-O)(AlCl2Me)(AlMe2Cl)1]-

AU Wei, Pingrong; Stephan, Douglas W.

CS Department of Chemistry and Biochemistry, University of Windsor, Windsor, ON, N9B 3P4, Can.

SO Organometallics (2003), 22(10), 1992-1994
CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 139:6977

AB Reactions of (Cp*CrCl2)2 (1) and Cp*Cr(HNP-i-Pr3)Cl2 (3) with excess AlMe3 gave [(Cp*Cr)4(μ -Cl)3(μ -CH2)3AlMe][(Me2Al)1(μ 3-O)(AlCl2Me)(AlMe2Cl)1] (2) and [(Cp*Cr)4(μ -Cl)3(μ -CH2)3AlMe][(Me2Al)2(μ -CH)(AlCl2Me)2] (4), resp. Although the cations are the same, the former salt has a Al3O-based anion, whereas the latter contains an Al4-methine anion.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 3 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:235302 CAPLUS

DN 139:158939

TI Synthesis of amino- and amido-aluminium derivatives and investigation of their dynamics in solution

AU Passarelli, Vincenzo; Carta, Giovanni; Rossetto, Gilberto; Zanella, Pierino

CS ICIS, CNR, Padua, Italy

SO Dalton Transactions (2003), (7), 1284-1291
CODEN: DTARAF; ISSN: 1477-9226

PB Royal Society of Chemistry

DT Journal

LA English

OS CASREACT 139:158939

AB The salts Li[Al(C4H8N)4]·nC4H8NH (n = 1, 2; C4H8NH = pyrrolidine) were prepared and characterized in solution by 1H-, 13C-, 7Li- and 27Al-NMR spectroscopy. Their reaction with AlCl3 (Cl/Li molar ratio = 3) affords the binary amido derivative [Al(C4H8N)3]2, which, on turn, is reactive towards AlX3, yielding [AlX2(C4H8N)]2 (X = Cl, CH3). Binuclear [AlY2(C4H8N)]2 (Y = Cl, CH3, C4H8N) react with [NH2Et2]Cl affording the amine complexes AlY2Cl(C4H8NH)n (Y = CH3, n = 1; Y = Cl, n = 1, 2). Alternatively, the monochloro species AlMe2Cl(C4H8NH) results from the reaction of AlMe3(C4H8NH) and AlCl3(C4H8NH) (CH3/Cl molar ratio = 2). The dichloro-Me derivative AlMeCl2(C4H8NH) was obtained by reacting AlMe3(C4H8NH) and AlCl3(C4H8NH) (Cl/CH3 molar ratio = 2). The Lewis adducts AlCl3(amine)n (amine = pyrrolidine, n = 1, 2; amine = N,N,N'-trimethylpropanediamine, n = 1) were isolated when AlCl3 was contacted with the stoichiometric amount of the amine. At variance with N,N,N'-trimethylpropanediamine, N,N,N'-trimethylethylenediamine and N,N,N',N'-tetramethylethylenediamine react with AlCl3 yielding the salt derivs. [AlCl2(amine)2][AlCl4]. The dynamic processes of the coordinated amine ligands of AlCl3(amine)n (amine = pyrrolidine, n = 1, 2; amine = N,N,N'-trimethylpropanediamine, n = 1) and [AlCl2(amine)2][AlCl4] (amine = N,N,N',N'-tetramethylethylenediamine) were studied in solution by NMR spectroscopy.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 4 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2003:139808 CAPLUS

DN 138:321313

TI Synthesis and Characterization of Organoaluminum Silylamido Complexes

AU Carmalt, Claire J.; Mileham, John D.; White, Andrew J. P.; Williams, David J.

CS Department of Chemistry Christopher Ingold Laboratories, University College London, London, WC1H 0AJ, UK

SO Organometallics (2003), 22(7), 1554-1557

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 138:321313

AB The reaction between [Me₂AlCl] and 1 equiv of HN(SiMe₂H)₂ in CH₂Cl₂ afforded colorless crystals of [cyclic] [Cl(Me)Al{NH(SiMe₂H)}₂]₂ (1). The structure of compound 1 has been determined and shows that the bridging NH(SiMe₂H) groups adopt a mutually trans arrangement. The related reaction between [Me₂AlCl] and 1 equivalent of HN(SiMe₂Ph)₂ in CH₂Cl₂ solution resulted in the isolation of colorless crystals. An x-ray crystallog. study showed that the crystals consist of a mixture of [Cl(Me)₂Al{NH(SiMe₂Ph)₂}] (2) and [Cl₂(Me)Al{NH(SiMe₂Ph)₂}] (3) in a 1:4 ratio. The formation of compound 3 involves the exchange of one of the Me groups attached to the aluminum atom with a chlorine atom.

RE.CNT 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 5 OF 79 CAPLUS COPYRIGHT 2008 ACS ON STN

AN 2002:558483 CAPLUS

DN 137:328202

TI A study on the thermal properties and the solid state pyrolysis of the Lewis acid/base adducts [X₃M·N(SnMe₃)₃] (X = Cl, Br; M = Al, Ga, In) and [Cl₂MeM·N(SnMe₃)₃] (M = Al, Ga) as molecular precursors for group 13 nitride materials

AU Cheng, Q. M.; Stark, O.; Stowasser, F.; Wohlfart, A.; Fischer, R. A.

CS Lehrstuhl fuer Anorganische Chemie II - Organometallics & Materials Chemistry, Ruhr-Universitaet Bochum, Bochum, D-44780, Germany

SO Journal of Materials Chemistry (2002), 12(8), 2470-2474

CODEN: JMACEP; ISSN: 0959-9428

PB Royal Society of Chemistry

DT Journal

LA English

AB The Lewis acid/base adducts [X₃M·N(SnMe₃)₃] (compds. 1-3: X = Cl, Br; M = Al, Ga, In) and [Cl₂MeM·N(SnMe₃)₃] (compound 4: M = Al, compound 5: M = Ga) were studied as precursors for group 13 nitride materials. The compds. were prepared by the 1:1 mol reaction of MX₃ and MeCl₂Me with N(SnMe₃)₃ at room temperature in di-Et ether and crystallized from CH₂Cl₂

at -20°C. As shown by thermal anal. and the anal. of the volatile byproducts, the precursors of the type [X₃M·N(SnMe₃)₃] decompose between 100 and 350°C predominantly in two steps via dehalostannylation by partly releasing Me₃SnCl. Polycryst. powders of AlN, GaN and InN were obtained after prolonged pyrolysis under inert conditions (argon, and in vacuo) at >350°C and were contaminated with metallic tin according to the X-ray powder diffraction patterns. The pyrolysis of the organometallic precursors [Cl₂MeM·N(SnMe₃)₃] (preceramic compds. 4 and 5) yielded tin-free nitride materials at <350°C due to the parallel elimination of SnMe₄ and Me₃SnCl, as evidenced by X-ray powder diffraction, elemental anal., NMR and IR spectroscopy of the products.

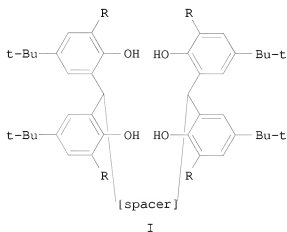
RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 6 OF 79 CAPLUS COPYRIGHT 2008 ACS ON STN

AN 2002:556601 CAPLUS

DN 137:263089

TI Synthesis and Reactivity of Bi-, Tri-, and Tetrametallic Aluminum
 Tetraphenolate Complexes
 AU Cottone, Andrew, III; Scott, Michael J.
 CS Department of Chemistry and Center for Catalysis, University of Florida,
 Gainesville, FL, 32611-7200, USA
 SO Organometallics (2002), 21(17), 3610-3627
 CODEN: ORGND7; ISSN: 0276-7333
 PB American Chemical Society
 DT Journal
 LA English
 OS CASREACT 137:263089
 GI



AB A series of ligands, each with four phenoxide arms, have been prepared with the intent to place two Lewis acidic metal center in close proximity and thus foster cooperative binding of external Lewis bases. The ligands, I [1-5; spacer = anthracene, R = t-Bu (1H4), spacer = dibenzofuran, R = t-Bu (2H4), spacer = xanthene, R = t-Bu (3H4), spacer = dibenzofuran, R = Me (4H4), spacer = anthracene, R = iPr (5H4)], incorporate a pair of 2,2'-methylenebis(4-tert-butyl-6-alkylphenol) groups linked by three different spacers: anthracene (1H4, 5H4), dibenzofuran (2H4, 4H4), and xanthene (3H4). The reaction of 1H4 and 2H4 with trimethylaluminum led to the formation of the C2-sym., tetranuclear aluminum compds. [(1)Al4Me8], 6, and [(2)Al4Me8], 7, resp. In contrast, when 3H4 was treated with trimethylaluminum, a binuclear aluminum species, [(3)Al2Me2], 8, containing an Al2O2 bridging unit, was isolated. Heating solns. of the tetranuclear complexes 6 and 7 in the presence of excess ligand induced the elimination of 2 equivalent of trimethylaluminum and afforded the binuclear aluminum complexes [(1)Al2Me2], 9, and [(2)Al2Me2], 10. Addition of NET4Cl to solns. of 9 and 10 resulted in the isolation of the anionic, bimetallic aluminum species [NET4][(1)Al2Me2Cl], 11, and [NET4][(2)Al2Me2Cl], 12. Both complexes contain a sym. chloride bridge between the two metal centers. In contrast, the reaction of NET4Cl with 8 produced the asym. dianionic compound [NET4]2[(3)Al2Me2Cl2], 13. Compound 9 reacts with sodium phenoxide to afford [(1)Al2Me2(OPh)Na(OEt2)], 14, and this species contains a six-membered NaAl2O3 ring. When ketones or aldehydes are added to 9, the two aluminum centers in the resulting product each bind a carbonyl group in an η^1 fashion. For example, the reaction of α,α,α -trimethylacetophenone with 9 produced the C2-sym. complex [(1)[AlMe(OC1H14)]2], 15, while 10, upon addition of cyclopentanone, afforded the asym., monometallic species [(2H)Al(OC5H8)], 16, with one free phenolic arm. The three remaining phenoxide groups in 16 all

coordinate to the lone aluminum. To probe the influence of the steric environment of the ligand on the reactivity, Me groups were incorporated at the ortho-position of the phenoxide, and this ligand, 4H4, reacted with trimethylaluminum to produce the trinuclear species [(4)Al3Me5], 17, with a stabilizing six-membered Al3O3 bridge. The slightly more sterically encumbered isopropyl-substituted ligand, 5H4, formed the binuclear aluminum species [(5)Al2Me2], 18, analogous to 8, 9, and 10. Addition of benzaldehyde to 18 afforded the asym. binuclear species {(5)[AlMe][AlMe(OCHPh)]}, 19, and the benzaldehyde substrate coordinates to only one aluminum in this complex. The crystal structures of all the compds. prepared were determined

RE.CNT 77 THERE ARE 77 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 7 OF 79 CAPLUS COPYRIGHT 2008 ACS ON STN

AN 2002:527073 CAPLUS

DN 137:384917

TI Lewis base properties of tris(trimethylstannyl)amine: unusually short M-N bonds of the adduct compounds [X3M·N(SnMe3)3] (X = Cl, Br; M = Al, Ga, In) and [Cl2(CH3)M·N(SnMe3)3] (M = Al, Ga)

AU Cheng, Q. M.; Stark, O.; Merz, K.; Winter, M.; Fischer, R. A.

CS Lehrstuhl fuer Anorganische Chemie II - Organometallics & Materials

Chemistry, Ruhr-Universitaet Bochum, Bochum, D-44780, Germany

SO Journal of the Chemical Society, Dalton Transactions (2002),

(14), 2933-2936

CODEN: JCSDA; ISSN: 1472-7773

PB Royal Society of Chemistry

DT Journal

LA English

AB The Lewis acid/base adducts [X3M·N(SnMe3)3] (1a: M = Al, X = Cl; 2a: M = Ga, X = Cl; 2b: M = Ga, X = Br; 3a: M = In, X = Cl; 3b: M = In, X = Br) and [Cl2MeM·N(SnMe3)3] (1b: M = Al, 2c: M = Ga) were prepared by 1 : 1 mol reaction of MX3 and MCl2Me with N(SnMe3)3 at room temperature in di-Et ether and crystallized from dichloromethane at -20°. The new compds. were fully characterized by elemental anal., NMR spectroscopy and single crystal x-ray diffraction. Unusually short M-N bond lengths of 1.87(1) Å for Al-N (1a), 1.950(7) Å for Ga-N (2a) and 2.148(6) Å for In-N (3a) were found indicating very strong donor-acceptor bonds.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 8 OF 79 CAPLUS COPYRIGHT 2008 ACS ON STN

AN 2002:306300 CAPLUS

DN 137:33402

TI One-Pot Synthesis of (η6-Arene)bis(triphenylphosphine)(methyl)ruthenium(II) Cations. X-ray Structures of [(η6-C6H6)Ru(Me)(PPh3)2][AlCl2Me2] and the η5-Thiophene Analogue

AU Fang, Xingqiao; Watkin, John G.; Scott, Brian L.; John, Kevin D.; Kubas, Gregory J.

CS Chemistry Division, Los Alamos National Laboratory, Los Alamos, NM, 87545, USA

SO Organometallics (2002), 21(11), 2336-2339

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 137:33402

AB The authors report 1-pot syntheses for complexes [(η6-arene)RuII(Me)(PPh3)2][AlCl2Me2] in high yields and x-ray structures of the η6-C6H6 and η5-thiophene derivs. Other derivs. include fluorobenzene and mesitylene complexes, and all of the complexes were

synthesized by addition of AlMe₃ to RuCl₂(PPh₃)₃ in the neat arene solvent or in an admixt. with hexane for thiophene and fluorobenzene. The crystal and mol. structures of [(arene)Ru(Me)(PPh₃)₂][AlCl₂Me₂]·CH₂Cl₂ (arene = η⁶-benzene, η⁵-thiophene) were determined by x-ray crystallog.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 9 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:746733 CAPLUS

DN 138:321349

TI Carbon-carbon bond formation via oxidative-addition processes of titanium(II) reagents with π-bonded organic substrates. Reactivity modifications by Lewis acids and Lewis bases. Part 22. Organic chemistry of subvalent transition metal complexes. [Erratum to document cited in CA135:107419]

AU Eisch, J. J.; Gitua, J. N.; Otieno, P. O.; Shi, X.

CS Department of Chemistry, The State University of New York at Binghamton, Binghamton, NY, 13902-6016, USA

SO Journal of Organometallic Chemistry (2001), 634(2), 214

CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

AB On page 233, Section 2.2.3, paragraph 2, lines 9-10, the word "benzpinacol" should be "benzopinacol". On page 237, Section 5.6, line 5, the phrase "... to consist of 95% cis-stilbene, 5% of..." should be written as "... to consist of 95% benzhydrol, 3% of...". On page 237, Section 5.6, line 6, the phrase "... and <1% of benzpinacol and..." should be written as "... and <2% of benzopinacol and..."

L4 ANSWER 10 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:295197 CAPLUS

DN 135:107419

TI Carbon-carbon bond formation via oxidative-addition processes of titanium(II) reagents with π-bonded organic substrates. Reactivity modifications by Lewis acids and Lewis bases Part 22. Organic chemistry of subvalent transition metal complexes

AU Eisch, J. J.; Gitua, J. N.; Otieno, P. O.; Shi, X.

CS Department of Chemistry, The State University of New York at Binghamton, Binghamton, NY, 13902-6016, USA

SO Journal of Organometallic Chemistry (2001), 624(1-2), 229-238

CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

OS CASREACT 135:107419

AB A series of titanium(II) derivs., TiE₂, was prepared by alkylative reduction of TiE₄ by two equivalent of n-butyllithium in THF at -78 to 25° (E = Cl, F, O₂, OPri, 0.5 NPh-CH₂-CH₂-NPh). The LiE byproduct could usually be removed by THF evaporation and dissoln. of the TiE₂ into toluene. All such TiE₂ derivs. were shown to effect the epimetallation and oligomerization of olefins, acetylenes and carbonyl derivs. in varying degrees. Particularly pertinent were the isolation and chemical reactions of titanium(II) isopropoxide, the postulated intermediate in the Kulinkovich synthesis of cyclopropanols from Et Grignard reagents and organic esters, as well as an intermediate in many allied reactions developed by the Sato group. The findings of the present study corroborate completely the foregoing hypothesis that titanium(II) isopropoxide is the key intermediate in such novel reactions in organic synthesis. Furthermore, Ti(OPri)₂ can be prepared readily in a relatively pure state and has been found to react with 1-alkenes, alkynes and ketones by epimetallation at 25° to form three-membered titanacycles, which can be utilized in organic synthesis.

Finally, the ease with which such TiE_2 derivs. epimetallate unsatd. organic substrates has been decreased by the steric demands of E and by the coordination of Lewis bases or donor solvent to the titanium(II) center. Lewis acids, on the other hand, greatly increase the rate of epimetalation by TiE_2 . A dramatic illustration of this effect is in the action of $TiCl_2 \cdot Me_2AlCl$ on unsatd. hydrocarbons, wherein the polymerization of ethylene and of 1-alkene and the cyclotrimerization of alkynes are found to occur at room temperature

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 11 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:250145 CAPLUS

DN 135:61377

TI The variable reaction behaviour of base-free [tris(trimethylsilyl)methyl]lithium with trihalides of earth metals and iron

AU Viefhaus, T.; Schwarz, W.; Hubler, K.; Locke, K.; Weidlein, J.

CS Inst. für Anorganische Chemie, Univ. Stuttgart, Stuttgart, Germany

SO Zeitschrift für Anorganische und Allgemeine Chemie (2001), 627(4), 715-725

CODEN: ZAACAB; ISSN: 0044-2313

PB Wiley-VCH Verlag GmbH

DT Journal

LA German

OS CASREACT 135:61377

AB Base-free $(Me_3Si)_3ClLi$ (Tsi-Li) reacts with $MHal_3$ ($M = Al, Ga, In$; $Hal = Cl, Br, I$) primarily to give the resp. metalates $[Tsi-MHal_3]Li$. Simultaneously to this simple metathesis, a methylation also takes place, mainly with heavier halides of Ga and In with excess Tsi-Li, forming the mono and di-Me compds. $Tsi-M(Me)_i$ ($M = Ga, In$), $Tsi-GaMe_2$, and $(Tsi)_2InMe$, resp., as well as the main byproduct 1,3-disilacyclobutane. Representatives of each type of compound were isolated by fractional crystallization

or sublimation and were characterized by spectroscopy (1H , ^{13}C and ^{29}Si NMR, IR, Raman) and x-ray elucidations. Reduction takes place when $FeCl_3$ reacts with Tsi-Li (1:3 ratio) in toluene at 55-60°, yielding red-violet $Fe(Tsi)_2$, $(Me_3Si)_3CCH_2Ph$, and low amts. of Tsi-Cl. $Fe(Tsi)_2$ is monomeric, crystallizes in the monoclinic space group $C2/c$ and consists of a linear C-Fe-C skeleton with $d(Fe-C) = 204.5(4)$ pm.

RE.CNT 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 12 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2001:85092 CAPLUS

DN 134:295927

TI Coordination of Lewis Acid to η^2 -Enonepalladium(0) Leading to Continuous Structure Variation from η^2 -Olefin Type to η^3 -Allyl Type

AU Ogoshi, Sensuke; Yoshida, Tomohiro; Nishida, Takuma; Morita, Masaki; Kurosawa, Hideo

CS Department of Applied Chemistry Faculty of Engineering, Osaka University, Suita Osaka, 565-0871, Japan

SO Journal of the American Chemical Society (2001), 123(9), 1944-1950

CODEN: JACSAT; ISSN: 0002-7863

PB American Chemical Society

DT Journal

LA English

OS CASREACT 134:295927

AB The reaction of α,β -unsatd. carbonyl compds., a $Pd(0)$ complex, and Lewis acids gave a new class of complexes showing a wide variety of structures with η^2 -type and η^3 -type coordination of the carbonyl

comps. The reaction of Pd(PhCH:CHCOCH3)(PPh3)2 with BF3·OEt2 or B(C6F5)3 quant. gave Pd complexes 1a,b having BX3-coordinated η2-enonepalladium structure, as revealed by x-ray structure anal. of the B(C6F5)3 adduct 1b. However, the reaction of Pd(PhCH:CHCHO)(PPh3)2 with BF3·OEt2 or B(C6F5)3 gave distorted zwitterionic η3-allylpalladium complexes 3a,b, where the Pd-carbonyl C distance in 3a (2.413(4) Å) is much shorter than that (2.96(1) Å) in 1b. The values of the P-P coupling constant and 13C chemical shift for carbonyl C are useful criteria for predicting how the η3-coordination mode contributes to the structure of the enone-Pd-Lewis acid system. MO calcs. on model complexes suggest that orbital overlap in the HOMO between the Pd and carbonyl C is enlarged by coordination of the Lewis acid to the carbonyl group. Pd-catalyzed conjugate addition of R-M (R-M = AlMe3, AlEt3, ZnEt2) and its plausible reaction path are also reported.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 13 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:742861 CAPLUS
DN 134:42178
TI Synthesis and purification of trimethylgallium for MOCVD: molecular structure of (KF)4·4(Me3Ga)
AU Starowieyski, Kazimierz B.; Chwojnowski, Andrzej; Jankowski, Krzysztof; Lewinski, Janusz; Zachara, Janusz
CS Faculty of Chemistry, Warsaw University of Technology, Warsaw, 00-662, Pol.
SO Applied Organometallic Chemistry (2000), 14(10), 616-622
CODEN: AOCHEX; ISSN: 0268-2605
PB John Wiley & Sons Ltd.
DT Journal
LA English
OS CASREACT 134:42178
AB Trimethylgallium was obtained from a 3:1 M mixture of Me2AlCl (1) and GaCl3 (2) only in the presence of NaCl. The mechanism of the reaction was traced. It is postulated that the gallium-aluminum dimers ClnMe2-nAlCl2 GaClmMe2-m (m and n = 0, 1 or 2), formed in consecutive alkylation steps, do not participate in further alkyl-chlorine exchange. NaCl splits the dimers that form the precipitate of Na[MeAlCl3] (3), thus liberating MenGaCl3-n which, on further alkylation by Me2AlCl, finally yields Me3Ga. For an MOCVD application, it is purified through a complex with KF, which under vacuum decomps. at 180-300°C, to yield a product contaminated by less than 1 ppm of the total impurities. The x-ray study of the complex reveals a tetrameric, highly sym. heterocubane of formula (KF)4·4(Me3Ga).

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 14 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:663063 CAPLUS
DN 134:4969
TI Group 13 Cation Formation with a Potentially Tridentate Ligand
AU Munoz-Hernandez, Miguel-Angel; Keizer, Timothy S.; Parkin, Sean; Patrick, Brian; Atwood, David A.
CS Department of Chemistry, The University of Kentucky, Lexington, KY, 40506-0055, USA
SO Organometallics (2000), 19(21), 4416-4421
CODEN: ORGND7; ISSN: 0276-7333
PB American Chemical Society
DT Journal
LA English
OS CASREACT 134:4969
AB A potentially tridentate ligand, 3,5-tBu2-2-HOC6H2CH:NC6H4NH2-2

(Phensal(tBu)H3), was prepared by the condensation of 1 equiv of phenylenediamine with 3,5-di-tert-butylsalicylaldehyde. When 1 equiv of this new ligand was added to AlMe3, {[Phensal(tBu)HAlMe]2} (1) results. In contrast, this reaction with GaMe3 produces [Phensal(tBu)H2]GaMe2 (2). When 1 or 2 equiv of Phensal(tBu)H3 is combined with Et2AlCl, [Phensal(tBu)H2]2AlCl (3) forms. However the same reaction with Me2GaCl leads to [Phensal(tBu)H2]Ga(Me)Cl (4). A cationic complex, {[Phensal(tBu)H2]2Al}+Cl- (5), is formed when 3 is dissolved in MeOH. The MeOH apparently mediates the formation of the cation but does not coordinate the cationic metal. When the solvent is removed, 5 reverts back to neutral 3. When 3 is combined with GaCl3 in toluene, another cationic complex, {[Phensal(tBu)H2]2Al}+GaCl4- (6), is formed. In a similar manner, {[Phensal(tBu)H2]2Al}+Me2AlCl2- (7) is formed by adding Me2AlCl to 3. The compds. were characterized by m.p., elemental analyses, IR, 1H and 27Al NMR, and in the case of 2, 5, and 6 single-crystal x-ray anal.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 15 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:249054 CAPLUS
DN 132:356046
TI Reactions of alkylaluminum chlorides with diols. Crystal structure of Cl5Al3[OC(CH3)2CH2C(CH3)2O]2
AU Zienkowska, Wanda; Pasynkiewicz, Stanislaw; Anulewicz-Ostrowska, Romana; Fraczak, Michal
CS Faculty of Chemistry, Warsaw University of Technology, Warsaw, 00-662, Pol.
SO Main Group Metal Chemistry (2000), 23(3), 169-178
CODEN: MGMCE8; ISSN: 0792-1241
PB Freund Publishing House Ltd.
DT Journal
LA English
AB The reaction of 2,4-dimethyl-2,4-pentanediol with the mixture of Me2AlCl and MeAlCl2 at 2:0.75:2.25 molar ratio of reactants proceeded yielding the complex Cl5Al3[OCMe2CH2CMe2O]2 (1). The pure complex 1 was isolated and characterized by 1H, 27Al NMR spectroscopy, mol. weight measurements and elemental anal. The crystal structure of 1 was determined by x-ray diffraction anal. However, the reaction of 2,4-dimethyl-2,4-pentanediol with Me2AlCl at 2:3 molar ratio of reagents gave the crystalline inseparable mixture of complexes MenCl5-nAl3[OCMe2CH2CMe2O]2 [n = 0-4] (2). The crystal structure of the product 2 was determined by x-ray diffraction study.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 16 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 2000:213045 CAPLUS
DN 132:308386
TI The correlation of dative bond length and parameter n in adducts Me3N-AlMe3-nCl_n (n ≤ 3)
AU Gelbrich, T.; Sieler, J.; Dumichen, U.
CS Department of Chemistry, University of Southampton, Southampton, SO17 1BJ, UK
SO Zeitschrift fuer Kristallographie (2000), 215(2), 127-130
CODEN: ZEKRDZ; ISSN: 0044-2968
PB R. Oldenbourg Verlag
DT Journal
LA English
AB Complexes Me3N-AlMe3-nCl_n (n = 0, 1, 2, 3) were synthesized in 84-89% yields by reaction of Me3N with the corresponding AlMe3-nCl_n in pentane or Et2O and structurally characterized by x-ray crystallog. and NMR spectroscopy. The shape of the mols. is trigonal-antiprismatic with the N

and Al atoms being tetrahedrally surrounded. The length of the dative bond N-Al is correlated with the parameter n due to inductive effects of the electroneg. Cl substituents, resulting in a difference in N-Al between all complexes of 0.1 Å (2.045, 2.010, 1.971, and 1.949 Å). This shortening with increasing n, however, is not linear.

RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 17 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:140339 CAPLUS

DN 132:308382

TI Bimetallic and cationic aluminum with N3O2 chelate ligands

AU Liu, Shengming; Munoz-Hernandez, Miguel-Angel; Atwood, David A.

CS Department of Chemistry, The University of Kentucky, Lexington, KY, USA

SO Journal of Organometallic Chemistry (2000), 596(1-2), 109-114

CODEN: JORCAI; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

AB The ligands aminobis(N-ethylenesalicylideneimine) (SalenN3H3) and aminobis(N-propylenesalicylideneimine) (SalpenN3H3) were used to form the bimetallic complexes SalenN3H{AlMe2}2 (1), SalpenN3H{AlMe2}2 (2), SalenN3H{AlMeCl}2 (3) and SalpenN3H{AlMeCl} (4). When extracted in THF 3 and 4 redistribute to form the ionic compds. [SalenN3H{Al(THF)}]+ [AlMe2Cl2]- (5) and [SalpenN3H{Al(THF)}]+ [AlMe2Cl2]- (6). The compds. were characterized by Mp analyses, 1H-NMR and IR, and in the case of 2 and 6 by x-ray crystallog. Addnl., the potential of 5 and 6 to serve as propylene oxide polymerization catalysts was examined

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 18 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 2000:20838 CAPLUS

DN 132:180614

TI Synthesis, properties, and molecular structures of alkylaluminum aminoalkoxide chlorides

AU Hecht, Elmar; Gelbrich, Thomas; Thiele, Karl-Heinz; Sieler, Joachim

CS Inst. Anorganische Chemie, Univ. Leipzig, Leipzig, Germany

SO Zeitschrift fuer Anorganische und Allgemeine Chemie (2000), 626(1), 180-186

CODEN: ZAACAB; ISSN: 0044-2313

PB Wiley-VCH Verlag GmbH

DT Journal

LA German

OS CASREACT 132:180614

AB Alkylaluminum aminoalkoxide chlorides R(Cl)AlOR* [R = Et, R* = (CH2)3NMe2 (1); R = Me, R* = CHMeCH2NMe2; R = Me, R* = (S)-N-methyl-2-pyrrolidinylmethyl] were obtained from the reaction of R2AlCl with the resp. amino alc. R*OH. The reaction between Me2AlCl and (S)-α,α-diphenyl-2-pyrrolidinemethanol (dpm-H) yielded, by contrast, the ionic {[MeAl(dpm)2AlMe2]+[MeAlCl3]-} complex (4). The new compds. were characterized by 1H, 13C, and 27Al NMR. Crystal structures of 1 and 4.OEt2 were determined by x-ray methods, and the absolute structure

of 4 was confirmed by refinement of the Flack parameter. The dimeric mols. of 1 are composed of 2 chelating rings linked via an almost planar Al2O2 unit, and pentacoordination is observed about Al. In contrast, each of the 2 crystallog. independent cation mols. of 4 contains one 4- and one 5-coordinate metal center.

RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 19 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:574285 CAPLUS

DN 131:322667

TI Neutral and Cationic Group 13 Phosphinimine and Phosphinimide Complexes

AU Ong, Christopher M.; McKarns, Peggy; Stephan, Douglas W.

CS Department of Chemistry and Biochemistry School of Physical Sciences,
University of Windsor, Windsor, ON, N9B 3P4, Can.

SO Organometallics (1999), 18(20), 4197-4204

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 131:322667

AB Reactions of the silylphosphinines R₃PNSiMe₃ (R = i-Pr, Ph, Cy) with AlCl₃, AlMeCl₂, AlMe₂Cl, and AlMe₃ afford the compds. (i-Pr₃PNSiMe₃)AlCl₃ (1), (R₃PNSiMe₃)AlMeCl₂ (R = i-Pr, 2; Ph, 3; Cy, 4), (R₃PNSiMe₃)AlMe₂Cl (R = i-Pr, 5; Ph, 6; Cy, 7), and (R₃PNSiMe₃)AlMe₃ (R = i-Pr, 8; Ph, 9; Cy, 10). Reaction of R₃PNH (R = t-Bu, Cy, Ph) with AlMe₂Cl and AlMe₃ afforded (R₃PNH)AlMe₂Cl (R = Cy, 11; t-Bu, 12) and (Ph₃PNH)AlMe₃ (13), resp. The dimeric species [Me₂Al(μ-NPt-Bu₃)]₂ (14) [AlCl₂(μ-NPt-Bu₃)]₂ (15) were derived from reactions of (t-Bu₃PNH) and AlMe₃ and t-Bu₃PNLi and MeAlCl₂, resp. Reaction of the bisphosphinimine salt LiCH(PPh₂(NSiMe₃))₂ (16) with aluminum, gallium, and indium halides yielded [CH(PPh₂(NSiMe₃))₂](MCl₂) (M = Al, 17; Ga, 18; In, 19) while the analogous species [CH(PPh₂(NSiMe₃))₂](AlMe₂) (20) was prepared via reaction of 16 with Me₂AlCl. The compds. [CH(PPh₂(NSiMe₃))₂](MR₂) (M = Al, Bz, 21; M = Ga, R = Me, 22; Bz, 23; M = In, R = Me, 24; Bz, 25) were readily prepared by treatment of 17-19 with the appropriate alkylating reagents. The borane B(C₆F₅)₃ reacts stoichiometrically with the adducts 8-10 to give the products [(R₃PNSiMe₃)AlMe₂](MeB(C₆F₅))₃ (R = i-Pr, 26; Ph, 27; Cy, 28) while treatment of 27 with PMe₃ affords clean conversion to the salt [(Ph₃PNSiMe₃)₂AlMe(PMe₃)][(MeB(C₆F₅))₃] (29). Similarly, species [Me₂Al(μ-NPt-Bu₃)₂AlMe](MeB(C₆F₅))₃ (30) and [Me₂Al(μ-NPt-Bu₃)₂AlMe(PMe₃)][(MeB(C₆F₅))₃] (31) were obtained from 14. Attempts to generate the related ionic derivs. from 20-25 yielded unstable mixts. of products. Under mild conditions these group 13 ionic species did not effect the polymerization of ethylene. Crystallog. data are reported for compds.

1, 3, 6, 8, 11, 13-15, 18, and 20.

RE.CNT 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 20 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:357005 CAPLUS

DN 131:116321

TI Reactivity of AlMe₃ with titanium(IV) Schiff base complexes: X-ray structure of [Ti{(μ-Br)(AlMe₂))}{(μ-Br)(AlMe₂X)}(salen)].C7H8 (X = Me or Br) and reactivity studies of mono-alkylated [Ti(Me)X(L)] complexes

AU Coles, Simon J.; Hursthouse, Michael B.; Kelly, David G.; Toner, Andrew J.; Walker, Neil M.

CS Department of Chemistry, University of Wales College of Cardiff, Cardiff, CF1 3TB, UK

SO Journal of Organometallic Chemistry (1999), 580(2), 304-312

CODEN: JORCAL; ISSN: 0022-328X

PB Elsevier Science S.A.

DT Journal

LA English

OS CASREACT 131:116321

AB [TiCl₂(salen)] (1) reacts with AlMe₃ (1:2) to give the heterometallic Ti(III) and Ti(IV) complexes [Ti{(μ-Cl)(AlMe₂))}{(μ-Cl)(AlMe₂X)}(salen)] (X = Me or Cl) and [TiMe{(μ-Cl)(AlCl₂Me)}(salen)] (3). Addition of Et₂O to 3 affords [Ti(Me)Cl(salen)] (4). The analogous

reaction of [TiBr2(salen)] gives the crystallog. characterized [Ti{(μ-Br)(AlMe2)}{(μ-Br)(AlMe2X)}(salen)] (X = Me or Br) and [Ti(Me)Br(salen)] in a single step, while the comparable reaction of [TiCl2{(3-MeO)2salen)] with AlMe3 yields [Ti(Me)Cl{(3-MeO)2salen)] with no evidence of Ti(III) species. Reactivity of both halide and Me groups of 4 was probed using Mg reduction, SbCl5 and AgBF4 halide abstraction and SO2 insertion reactions. Hydrolysis of [Ti(Me)X(L)] complexes affords μ-oxo species [TiX(L)]2(μ-O) [X = Cl, L = salen; X = Br, L = salen; X=Cl, L = (3-MeO)2salen].

RE.CNT 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 21 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1999:109179 CAPLUS

DN 130:290589

TI Stereochemical control of cis- and trans-TiCl2 groups in six-coordinate complexes [(L)TiCl2] (L2- = N2O2-donor Schiff base) and reactions with trimethylaluminum to form cationic aluminum species

AU Corden, Jonathan P.; Errington, William; Moore, Peter; Wallbridge, Malcolm G. H.

CS Department of Chemistry, University of Warwick, Coventry, CV4 7AL, UK

SO Chemical Communications (Cambridge) (1999), (4), 323-324

CODEN: CHCOFS; ISSN: 1359-7345

PB Royal Society of Chemistry

DT Journal

LA English

AB The 1st example of a cis-configuration of the TiCl2 group in a six-coordinate titanium complex [(L)TiCl2], involving a tetradentate N2O2-donor Schiff base ligand (L2-), is reported. These complexes act as catalysts for the polymerization of ethene in the presence of MAO. The β-cis configuration of the complex [(L)TiCl2] (3, H2L is the Schiff base from the 1:2 condensation of trans-cyclohexane-1,2-diamine with 2-propionylphenol) was determined by x-ray crystallog. (3·CHCl3: monoclinic, space group P21/c, R1 = 0.053). The reaction of the complex trans-[(L)TiCl2] (H2L is the Schiff base from the 1:2 condensation of ethane-1,2-diamine with 2-propionylphenol) with trimethylaluminum generated first the complex [(L)TiCl2]·2AlMe3, and then [(L)(AlMe)(AlMe2)]+[AlCl3Me]-, which crystallized in the orthorhombic space group Pna21, R1 = 0.074.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 22 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:605762 CAPLUS

DN 129:316365

TI Bis(boryl)metallocenes. 2. Syntheses of 1,1'-Bis(boryl)cobaltocenium Complexes

AU Herberich, Gerhard E.; Englert, Ulli; Fischer, Andreas; Wiebelhaus, Dag

CS Institut fuer Anorganische Chemie, Technische Hochschule Aachen, Aachen, D-52056, Germany

SO Organometallics (1998), 17(22), 4769-4775

CODEN: ORGND7; ISSN: 0276-7333

PB American Chemical Society

DT Journal

LA English

OS CASREACT 129:316365

AB Bis(boryl)cobaltocenes Co(C5H4BR2)2 (1) can be made from CoBr2(DME) and alkali metal borylcyclopentadienides M(C5H4BR2) (M = Li, Na) (2). The two dialkylamino compds. 1c (R = NMe2) and 1d (R = NEt2) can be obtained in this way. Oxidation with C2Cl6 provides the ionic cobaltocenium chlorides (1c)Cl and (1d)Cl. Further cobaltocenium compds. can be synthesized by modification of the substituents at B. Treatment of (1d)Cl with excess

BC13 affords the highly reactive chloride $\text{Co}(\text{C}_5\text{H}_4\text{BCl}_2)(\text{C}_5\text{H}_4\text{BCl}_3)$ (5). Pinacolysis of 5 then affords the monosubstitution product $\text{Co}[\text{C}_5\text{H}_4\text{B}(\text{OCMe}_2)_2](\text{C}_5\text{H}_4\text{BCl}_3)$ (9) and the disubstitution product $[\text{Co}(\text{C}_5\text{H}_4\text{B}(\text{OCMe}_2)_2)_2\text{Cl}][(\text{1h})\text{Cl}]$, resp., depending on stoichiometry and reaction conditions. Reaction of 5 with tetramethyltin replaces two Cl atoms with Me groups to give $\text{Co}(\text{C}_5\text{H}_4\text{BMe}_2)(\text{C}_5\text{H}_4\text{BCl}_3)$ (10), while the more reactive trimethylaluminum replaces four Cl substituents to give $[\text{Co}(\text{C}_5\text{H}_4\text{BMe}_2)_2\text{AlCl}_4][(\text{1b})\text{AlCl}_4]$ and, after metathesis with NBu_4PF_6 in CH_2Cl_2 , the more convenient hexafluorophosphate $(\text{1b})\text{PF}_6$. The corresponding cobaltocene 1b is then accessible via conventional amalgam reduction of $(\text{1b})\text{AlCl}_4$. Reaction of 5 with com. AsF_3 affords the robust inverse chelate $\text{Co}(\text{C}_5\text{H}_4\text{BF}_2)_2(\mu\text{-OH})$ (11). Three structural types are encountered for the cobaltocenium derivs.: (i) ionic compds. (type A) such as $(\text{1c,d,h})\text{Cl}$, $(\text{1b})\text{AlCl}_4$, and $(\text{1b})\text{PF}_6$; (ii) zwitterionic or semiquaternized compds. (type B) with one trigonal and one tetrahedral B center such as 5, 9, and 10; of these, 5 is fluxional in solution with two effectively equivalent ligands while 9 and 10 display static structures; and (iii) the inverse chelate structure of 11 (type C) which is found in the crystal and in solution. The crystal and mol. structures of 11 were determined

by

x-ray crystallog.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 23 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1998:172335 CAPLUS

DN 128:252098

TI Some crown ether chemistry of Ti, Zr and Hf derived from liquid clathrate media

AU Alvanipour, Abbas; Atwood, Jerry L.; Bott, Simon G.; Junk, Peter C.; Kynast, Ulrich H.; Prinz, Horst

CS Department of Chemistry, University of Missouri-Columbia, Columbia, MO, 65211, USA

SO Journal of the Chemical Society, Dalton Transactions: Inorganic Chemistry (1998), (7), 1223-1228

CODEN: JCDBTI; ISSN: 0300-9246

PB Royal Society of Chemistry

DT Journal

LA English

AB The reaction of $[\text{Ti}(\eta\text{-C}_5\text{H}_5)_2\text{Cl}_2]$ with $\text{HCl}(\text{g})$ in the presence of 18-crown-6 formed the oxonium ion-containing complex $[\text{H}_3\text{O}^+\cdot 18\text{-crown-6}][\text{TiCl}_5(\text{H}_2\text{O})^-]$ (1). Its crystal structure shows the oxonium ion resides within the crown ether and has a pyramidal structure. Treatment of $[\text{Ti}(\eta\text{-C}_5\text{H}_5)_2\text{Cl}_3]$ with AlMe_3 in the presence of 18-crown-6 gave the titanium(III) complex $[\text{Ti}(\eta\text{-C}_5\text{H}_5)_2\text{Cl}^+\cdot 18\text{-crown-6}][\text{AlCl}_2\text{Me}_2^-]$ (2). The structure of 2 reveals a cation with a five-coordinate Ti where the centroid of the C_5H_5 ring occupies the apex of a square pyramid. The crown ether 18-crown-6 underwent C-O bond scission by treatment with ZrCl_4 in the presence of THF to form the ring-opened zirconium(IV) coordination complex $[\text{ZrCl}_2\cdot(\text{OCH}_2\text{CH}_2)_5\text{OCH}_2\text{CH}_2\text{Cl}^+][\text{ZrCl}_5(\text{THF})^-]$ (3). The structure of 3 shows the formation of a zirconium alkoxide species formed by the ring-opening reaction. The seven-coordinate zirconium center has pentagonal-bipyramidal geometry with two chloride atoms in the axial positions. In an analogous reaction, but in the presence of NaCl , HfCl_4 formed the ionic complex $[\text{Na}^+\cdot 18\text{-crown-6}][\text{HfCl}_5(\text{THF})^-]$ (4), which has a structure similar to that of (1). 1-4 Were characterized by x-ray crystallog. (1: monoclinic, space group $\text{P}2_1/\text{c}$, $R = 0.049$; 2: monoclinic, space group $\text{P}2_1/\text{c}$, $R = 0.070$; 3: triclinic, space group $\text{P}3_1$, $R = 0.068$; 4: monoclinic, space group $\text{P}2_1/\text{c}$, $R = 0.049$).

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 24 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1997:259744 CAPLUS

DN 126:277519

TI Base Effects on the Formation of Four- and Five-Coordinate Cationic Aluminum Complexes

AU Jegier, Jolin A.; Atwood, David A.

CS Department of Chemistry Center for Main Group Chemistry, North Dakota State University, Fargo, ND, 58105, USA

SO Inorganic Chemistry (1997), 36(10), 2034-2039

CODEN: INOCAJ; ISSN: 0020-1669

PB American Chemical Society

DT Journal

LA English

AB This work was conducted as part of the authors' continuing effort to determine the factors that affect cation formation for organometallic Al complexes. The interactions of R2AlX (R = Me, iBu, tBu; X = Cl, Br, iodo) with the monodentate bases THF, pyridine, NET3, HNIPr2, H2NiBu, H2NtBu, and O:PPh3 were examined to determine the role of the base in cation formation. These reactions resulted in the 9 neutral adducts R2AlX·base as well as the 3 cationic complexes [R2Al(base)2]X. The reactions of Me2AlX (X = Cl, Br) with PMDETA (N,N',N'',N'''-pentamethyldiethylenetriamine) and the catalytic activity of the resulting 2 cationic complexes are also discussed. All of the compds. were characterized by m.p., IR, 1H-NMR, and elemental analyses, and in one an x-ray crystallog. study was carried out. X-ray data for [(PMDETA)AlMe2][Me2AlCl2] (13): triclinic, space group P.hivin.1, a 6.9542(6), b 12.2058(10), c 13.2417(11) Å, α 106.236(2), β 98.885(2), γ 93.807(2)°, and Z = 2 for 181 parameters refined on 4358 reflections having F > 6.0σ(F), R = 0.0697, and Rw = 0.0697. Complex 13 showed some activity as catalyst in living polymerization of propylene oxide, affording the corresponding oligoether.

L4 ANSWER 25 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1996:592441 CAPLUS

DN 125:301142

TI Formation of titanium-aluminum Schiff base complexes: x-ray structure of [Ti(μ-Cl)(AlMe2)(μ-Cl)(AlMe2X)(salen)] (X = Me or Cl)

AU Kelly, David G.; Toner, Andrew J.; Walker, Neil M.; Coles, Simon J.; Hursthouse, Michael B.

CS Dep. Chem., Manchester Metropolitan Univ., Manchester, M1 5GD, UK

SO Polyhedron (1996), 15(23), 4307-4310

CODEN: PLYHDE; ISSN: 0277-5387

PB Elsevier

DT Journal

LA English

AB Reaction of [TiCl2(salen)] [salen = N,N'-ethylenebis(salicylideneimine)] with AlMe3 in toluene/hexane afforded the hetero-bimetallic [Ti(μ-Cl)(AlMe2){(μ-Cl)(AlMe2X)}(salen)] (X = Me or Cl), 1 and [TiMe{(μ-Cl)(AlCl2Me)}(salen)], 2; the crystal structure of the titanium(III) complex (1) has been determined. In THF 2 forms the stable monoalkylated titanium(IV) complex [Ti(Me)Cl(salen)] (3).

L4 ANSWER 26 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1995:308917 CAPLUS

DN 122:132352

TI Why Do Catalytic Quantities of Lewis Acid Generally Yield More Product than 1.1 Equivalent in the Intramolecular Diels-Alder Reaction with a Furan Diene? Competitive Complexation NMR Studies Provide an Answer

AU Hunt, Ian R.; Rogers, Christine; Woo, Simon; Rauk, Arvi; Keay, Brian A.

CS Department of Chemistry, University of Calgary, Calgary, AB, T2N 1N4, Can.

SO Journal of the American Chemical Society (1995), 117(3), 1049-56

CODEN: JACSAT; ISSN: 0002-7863

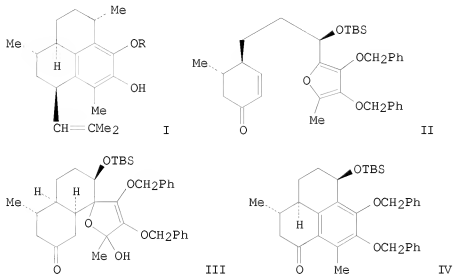
PB American Chemical Society
 DT Journal
 LA English
 AB The results presented here provide exptl. support for a hypothesis made by us to rationalize literature observations on intramol. Diels-Alder reactions (IMDA) and our own observations on IMDA with a furan diene (IMDAF) regarding the quantity (catalytic or stoichiometric) of Lewis acid required to facilitate reaction. Evidence suggests that the reactions can be divided into two classes: those that proceed with catalytic quantities of Lewis acid (herein defined as type A) and those that require a stoichiometric quantity of Lewis acid (type B). We believe that the relative basicity of the controlling functional groups in addend and adduct can be critical in determining the quantity of Lewis acid required. The relative Lewis basicity has been studied using competitive complexation studies using low-temperature NMR expts. to study the coordination of methylaluminum dichloride (MAC) and $\text{BF}_3 \cdot \text{Et}_2\text{O}$ with model oxygen Lewis bases and IMDAF addends and adducts.

L4 ANSWER 27 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1994:680695 CAPLUS
 DN 121:280695
 TI Cationic, Neutral, and Anionic Organoaluminum Species in $[\text{AlMe}_2(18\text{-crown-6})\text{AlMe}_2\text{X}][\text{AlMe}_3\text{X}]$ ($\text{X} = \text{Cl}, \text{I}$)
 AU Atwood, Jerry L.; Bott, Simon G.; Harvey, Stephen; Junk, Peter C.
 CS Department of Chemistry, University of Missouri-Columbia, Columbia, MO, 65211, USA
 SO Organometallics (1994), 13(11), 4151-2
 CODEN: ORGND7; ISSN: 0276-7333
 DT Journal
 LA English
 AB 18-Crown-6 reacts with AlX_3 ($\text{X} = \text{Cl}, \text{I}$) in an excess of AlMe_3 in toluene to form the liquid clathrate species $[\text{AlMe}_2(18\text{-crown-6})\text{AlMe}_2\text{X}][\text{AlMe}_3\text{X}]$. The AlMe_2^+ ion is coordinated to the interior of the macrocycle, while the neutral species is coordinated to the exterior, via an inverted crown O atom.

L4 ANSWER 28 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1994:298773 CAPLUS
 DN 120:298773
 TI Synthesis and properties of bis(dichloromethylaluminum)dichlorodiethyllead complex
 AU Jaworski, Krzysztof
 CS Inst. Chem., Warsaw Tech. Univ., Plock, 09-400, Pol.
 SO Bulletin of the Polish Academy of Sciences, Chemistry (1992), 40(4), 287-91
 CODEN: BPACEQ; ISSN: 0239-7285
 DT Journal
 LA English
 AB $[\text{Pb}(\text{C}_2\text{H}_5)_2\text{C}_2\text{I}_2.(\text{AlCH}_3\text{Cl}_2)_2]$ containing different alkyl groups attached to the lead and aluminum atoms was prepared by heating the components in benzene. The complex appeared to be an active catalyst in the redistribution reaction of alkyl groups between $\text{Pb}(\text{CH}_3)_4$ and $\text{Pb}(\text{C}_2\text{H}_5)_4$.

L4 ANSWER 29 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1993:428385 CAPLUS
 DN 119:28385
 TI Efficient synthesis of a hexasubstituted aromatic ring via an intramolecular Michael-aldol process: preparation of a late tricyclic intermediate for the synthesis of pseudopterosin A
 AU Jung, Michael E.; Siedem, Christopher S.
 CS Dep. Chem. Biochem., Univ. California, Los Angeles, CA, 90024, USA
 SO Journal of the American Chemical Society (1993), 115(9), 3822-3

DT Journal
LA English
OS CASREACT 119:28385
GI



AB An efficient synthesis of a trisubstituted phenalene derivative containing the tricyclic ring skeleton of pseudopteriosin A (I; R = β -D-xylopyranosyl) is described. The key step involves a novel intramol. Michael addition of an electron-rich furan in II (TBS = SiMe₂CM₃) to a cyclohexenone followed by an aldol reaction of III to give IV in good yield.

L4 ANSWER 30 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1992:194493 CAPLUS

DN 116:194493

TI Unprecedented coordination of a silicon-chlorine bond to a transition metal: synthesis and structure of [rac-C₂H₄(indenyl)₂Zr{CH(SiMe₂Cl)(SiMe₃)}] [Al₂Cl₆5Me0.5] formed by reversible silicon-carbon bond activation

AU Horton, Andrew D.; Orpen, A. Guy

CS Koninklijke/Shell-Lab., Amsterdam, 1003 AA, Neth.

SO Organometallics (1992), 11(3), 1193-201

CODEN: ORGND7; ISSN: 0276-7333

DT Journal

LA English

AB Reaction of Cp'₂Zr{CH(SiMe₃)₂}Cl with a 2-fold excess of AlCl₃ affords the novel Si-C bond activation products [cyclic] [Cp'₂Zr{CH(SiMe₂Cl)(SiMe₃)}] [Al₂Cl_nMe_{7-n}] [Cp'₂ = rac-C₂H₄(indenyl)₂ (1), (C₅H₅)₂]; the Lewis acid adducts Cp'₂Zr{CH(SiMe₃)₂}Cl·AlCl₃ are obtained with 1 equivalent of AlCl₃. In contrast, Cp'₂Zr(CH₂SiMe₃)Cl (Cp'₂ = rac-C₂H₄(indenyl)₂, (C₅Me₅)₂) undergoes rapid alkyl-chloride exchange with AlCl₃, giving Cp'₂ZrCl₂·Me₃SiCH₂AlCl₂. The structure of 1 was determined by x-ray crystallog. The unusual chelating alkyl ligand shows the first example of Si-Cl bond coordination to a transition metal. The Si-C bond activation reaction leading to 1 is reversible, as shown by formation of rac-C₂H₄(indenyl)₂Zr{CH(SiMe₃)₂}Cl on reaction of 1 with a 2-fold excess of AlMe₃. Sterically and electronically saturated 1 is inert toward unsatd. substrates. Treatment of 1 with Lewis bases affords rac-C₂H₄(indenyl)₂Zr{η¹-CH(SiMe₂Cl)(SiMe₃)}Cl.

L4 ANSWER 31 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1990:572115 CAPLUS

DN 113:172115

TI Reaction of trimethylaluminum with selenium tetrachloride: synthesis of [(CH₃)₃Se][ClAl(CH₃)₂(Cl)Al(CH₃)₃], the first selenium-based liquid clathrate

AU Sangokoya, Samuel A.; Robinson, Gregory H.

CS Dep. Chem., Clemson Univ., Clemson, SC, 29634-1905, USA

SO Journal of Inclusion Phenomena and Molecular Recognition in Chemistry (1990), 9(1), 85-8

CODEN: JIMCEN; ISSN: 0923-0750

DT Journal

LA English

AB SeCl₄ reacts with an excess of Me₃Al in the presence of aromatic solvents to afford a nonstoichiometric organoaluminum-selenium based inclusion compound [Me₃Se][ClAlMe₂(Cl)AlMe₃](aromatic solvent)_n. The cation of the parent compound of the inclusion complex results from the alkylation of SeCl₄ producing the Me₃Se⁺ selenonium ion while the anion consists of a Me₂AlCl unit and a Me₃Al unit bridged by a chlorine atom. This liquid inclusion complex, a liquid clathrate, can accommodate 8.5 benzene mols. or 8.3 guest toluene mols. per anionic moiety.

L4 ANSWER 32 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1990:406414 CAPLUS

DN 113:6414

TI Synthesis and molecular structure of {[Se(CH₃)₃][(CH₃)AlCl₃]}_n: a novel two-dimensional layered organoaluminum-selenium polymer

AU Sangokoya, Samuel A.; Pennington, William T.; Robinson, Gregory H.

CS Dep. Chem., Clemson Univ., Clemson, SC, 20634-1905, USA

SO Journal of Crystallographic and Spectroscopic Research (1990), 20(1), 53-7

CODEN: JCREDB; ISSN: 0277-8068

DT Journal

LA English

AB The crystalline product {(SeMe₃)(MeAlCl₃)}_n (I) was prepared from reaction of SeCl₄ with Me₃Al in heptane and its x-ray crystal structure was determined. The asym. unit contains one selenonium ion, SeMe₃⁺, and one organoaluminum anionic species MeAlCl₃⁻. Secondary interactions (Se...Cl) link the ions along two dimensions to form infinite layers to give I as a layered organoaluminum-selenium polymer. The mean Se-C bond distance is 1.921(5) Å while the mean C-Se-C bond angle is 9.14(4)°. The independent Al-C bond distance is 1.927 Å while the mean Al-Cl bond distance is 1.166(7) Å.

L4 ANSWER 33 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1990:118894 CAPLUS

DN 112:118894

TI Alkylation of tellurium tetrachloride by trimethylaluminum: synthesis and molecular structure of [Te(CH₃)₃][Al(CH₃)₂Cl₂]: a novel organotelluronium-aluminum oligomer

AU Sangokoya, Samuel A.; Pennington, William T.; Robinson, Gregory H.

CS Dep. Chem., Clemson Univ., Clemson, SC, 29634-1905, USA

SO Journal of Crystallographic and Spectroscopic Research (1989), 19(3), 433-8

CODEN: JCREDB; ISSN: 0277-8068

DT Journal

LA English

AB Reaction of TeCl₄ with AlMe₃ in toluene affords [TeMe₃][AlMe₂Cl₂] for which an x-ray crystal structure was determined. The compound does not exist as discrete cations and anions but may be described as an organotelluronium-aluminum oligomer. The mean Te-C bond distance is

2.130(11) Å while the mean Al-Cl bond distance is 2.221(4) Å.

- L4 ANSWER 34 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1989:646694 CAPLUS
DN 111:246694
TI Reaction of organoaluminum species with bidentate phosphine ligands. Synthesis and molecular structure of [AlCl₃][(Ph₂P)(O)CH₂][AlCl₂(CH₃)] and [AlCl₃]₂[(Ph₂P)(O)CH₂]₂
AU Sangokoya, Samuel A.; Lee, Baosheng; Self, Mark F.; Pennington, William T.; Robinson, Gregory H.
CS Dep. Chem., Clemson Univ., Clemson, SC, 29634-1905, USA
SO Polyhedron (1989), 8(12), 1497-1502
CODEN: PLYHDE; ISSN: 0277-5387
DT Journal
LA English
AB Reaction of Me₃Al₂Cl₃ with (Ph₂P)CH₂ and (Ph₂P)(O)CH₂ affords [AlCl₃][μ-(Ph₂P)CH₂][AlCl₂(Me)] (I) and [AlCl₃]₂[(Ph₂P)(O)CH₂]₂ (II), resp. I crystallizes in triclinic space group P \bar{h} 1v1, a 10.009(3), b 10.748(4), c 14.806(5) Å, α 90.38(3), β 103.36(2), γ 96.89(3)°, Z = 2, R = 0.047, R_w = 0.066. II crystallizes in monoclinic space group C₂, a 12.773(2), b 13.028(3), c 9.461(2) Å, β 104.43(2)°, Z = 2, R = 0.043, R_w = 0.050. Both products result from reaction of the redistribution products of Me₃Al₂Cl₃, AlCl₃ and AlCl₂Me.
- L4 ANSWER 35 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1989:75597 CAPLUS
DN 110:75597
TI Alternative methods of modifying the calixarene conformation. The synthesis and molecular structures of tert-butylcalix[4]arene methyl ether complexes with aluminum alkyl species
AU Bott, Simon G.; Coleman, Anthony W.; Atwood, Jerry L.
CS Dep. Chem., Univ. Alabama, Tuscaloosa, AL, 35487, USA
SO Journal of Inclusion Phenomena (1987), 5(6), 747-58
CODEN: JOIPDF; ISSN: 0167-7861
DT Journal
LA English
AB The mol. structures of the title complexes were confirmed by x-ray crystallog. and NMR analyses. The configurations of calix[4]arenes may be modified by the formation of donor-acceptor complexes which make use of the oxygen atoms of the macrocycle. Thus, [tert-butylcalix[4]arene Me ether][AlMe₃]₂ exhibits the previously unseen 1,2-alternate geometry, while [tert-butylcalix[4]arene Me ether][MeAlCl₂]₂ and [tert-butylcalix[4]arene Me ether][EtAlCl₂]₂ show the 1,3-alternate configuration. The Al-O lengths in all three complexes are normal for donor-acceptor interactions.
- L4 ANSWER 36 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
AN 1988:611116 CAPLUS
DN 109:211116
TI Sterically crowded aryloxy compounds of aluminum
AU Healy, Matthew D.; Wierda, Derk A.; Barron, Andrew R.
CS Dep. Chem., Harvard Univ., Cambridge, MA, 02138, USA
SO Organometallics (1988), 7(12), 2543-8
CODEN: ORGND7; ISSN: 0276-7333
DT Journal
LA English
OS CASREACT 109:211116
AB Reaction of AlMe₃ with 2 equiv of the sterically hindered phenol 2,6-di-tert-butyl-4-methylphenol (BHT-H) gives the disubstituted compound AlMe(BHT)₂ (I), whereas excess of AlMe₃ leads to the compound AlMe₂(BHT) (II). Addition of PMe₃ to I and II yields AlMe(BHT)₂(PMe₃) and

AlMe₂(BHT)(PMe₃) (III), resp. The addition of 1 equiv of Me₃NHCl to I and III gave AlCl(BHT)2(NMe₃) and AlClMe(BHT)(NMe₃) (IV); reaction of a further equivalent of Me₃NHCl to IV affords the ionic complex [Me₃NH][AlMeCl₂(BHT)] (V). The mol. structures of III and V were determined by x-ray crystallog. The Al-O distances are shorter and Al-O-C angles larger than usually found for aluminum alkoxides. The possibility of a π -type interaction between Al and O is discussed.

L4 ANSWER 37 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1988:197093 CAPLUS

DN 108:197093

TI Aluminum dichloride and dibromide. Preparation, spectroscopic (including matrix isolation) study, reactions, and role (together with alkyl(aryl)aluminum monohalides) in the preparation of organoaluminum compounds

AU Olah, George A.; Farooq, Omar; Farnia, S. Morteza F.; Bruce, Mark R.; Clouet, Francoise L.; Morton, Peter R.; Prakash, G. K. Surya; Stevens, Raymond C.; Bau, Robert; et al.

CS Donald P. and Katherine B. Loker Hydrocarbon Res. Inst., Univ. Southern California, Los Angeles, CA, 90089-1661, USA

SO Journal of the American Chemical Society (1988), 110(10), 3231-8
CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

OS CASREACT 108:197093

AB Anhydrous AlX (X = Cl, Br) when heated in a 2:1 molar ratio with Al powder in a suspension of dry heptane or methylcyclohexane is partially reduced to AlX₂. Ultrasound treatment (sonication) significantly promotes the reaction. AlCl₂ in higher purity was obtained by the reaction of gaseous AlCl₃ with Al-metal in a high-vacuum reactor, allowing subsequent study by IR spectroscopy. AlCl₂ in higher purity was also obtained by the high-temperature reaction of gaseous AlCP₃ with Al-metal in a high-vacuum reactor. Al₂(iso-Bu)₄-xCl_x was also prepared through the reaction of Al₂(iso-Bu)₄ and HCl at low temperature. Both materials were studied by IR spectroscopy and compared to AlCl₂ prepared and isolated through the codeposition of Al atoms and Cl₂ in a solid Ar matrix. The matrix study characterized AlCl₂ together with AlCl and AlCl₃, which were also formed in the system. Paramagnetic AlX₂ are associated in the condensed state (except under matrix isolation conditions where they are monomeric). An ESR study of the pyridinium complex of AlCl₂ was carried out and showed its paramagnetic nature. In the present study, for simplicity, the reactions of AlX₂ are considered as those of the dimers but could involve higher associated oligomers. MNDO calcs. on the heats of formation of 7 possible isomeric structures of Al₂Cl₄ indicate the preference for both halogen bridging and significant Al-Al bonding in the dimer. Reaction of AlCl₃ + Al with CH₂H₄, the Hall and Nash reaction, was restudied by ¹³C and ²⁷Al NMR spectroscopy. The reaction gives, besides Al₂EtCl₃, 1,2- and 1,1-C₂H₄(AlCl₂)₂. Cyclohexene in a similar reaction gives, although less readily, 1,2-bis(dichloroaluminio)cyclohexane. The reactions are indicative of addition of (AlCl₂)₂ to the olefins. Alkyl- and arylaluminum monohalides are intermediately formed in the reaction of alkyl halides or halobenzenes with active Al powder. AlX₂ are also considered to be dimeric in nature and immediately react with excess of the alkyl (aryl) halides to form the corresponding sesquihalides. AlX₂ formed in the AlX₃-Al metal systems react with alkyl or aryl halides to give alkyl(aryl)aluminum dihalides. Sonication was found to significantly promote these reactions.

L4 ANSWER 38 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1988:15200 CAPLUS

DN 108:15200

TI Preparation and structure of the dichloro[15-crown-5]ytterbium(1+) cation,

an example of seven-coordinate ytterbium

AU Atwood, David A.; Bott, Simon G.; Atwood, Jerry L.
 CS Dep. Chem., Univ. Alabama, University, AL, 35486, USA
 SO Journal of Coordination Chemistry (1987), 16(1), 93-6
 CODEN: JCCMBQ; ISSN: 0095-8972

DT Journal
 LA English

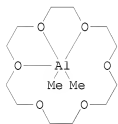
AB [YbCl₂(15-crown-5)][AlCl₂Me₂] was prepared by the reaction of YbCl₃, 15-crown-5, and AlMe₃ (1:1:4) in toluene. The colorless air-sensitive crystals belong to the orthorhombic space group Pmma with a 11.313(7), b 10.907(5), c 17.716(7) Å, and d.(calculated) = 1.81 g cm⁻³, Z = 4, R = 0.048 based on 1502 observed reflection. The Yb atom is displaced 0.20 Å from the plane of the crown ether, and the Yb-O bond distance are 2.23-2.32 Å.

L4 ANSWER 39 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1987:407248 CAPLUS
 DN 107:7248
 OREF 107:1339a,1342a

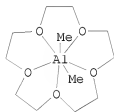
TI Stabilization of cations [AlMe₂]⁺ with crown ethers

AU Bott, Simon G.; Alvanipour, Abbas; Morley, S. David; Atwood, David A.; Means, C. Mitchell; Coleman, Anthony W.; Atwood, Jerry L.
 CS Dep. Chem., Univ. Alabama, Tuscaloosa, AL, 35487, USA
 SO Angewandte Chemie (1987), 99(5), 476-8
 CODEN: ANCEAD; ISSN: 0044-8249

DT Journal
 LA German
 OS CASREACT 107:7248
 GI



I



II

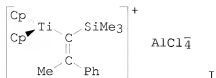
AB Condensation of 18-crown-6 or 15-crown-5 with Me₃Al in the presence of titanocene dichloride or CoCl₂ gave crown ether-stabilized Me₂Al⁺ cations I and II. The crystal structures of I and II are reported.

L4 ANSWER 40 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1986:5969 CAPLUS
 DN 104:5969
 OREF 104:1095a,1098a

TI Organometallic compounds of Group III. Part 41. Direct observation of the initial insertion of an unsaturated hydrocarbon into the titanium-carbon bond of the soluble Ziegler polymerization catalyst Cp₂TiCl₂-MeAlCl₂

AU Eisch, John J.; Piotrowski, Andrzej M.; Brownstein, Sydney K.; Gabe, Eric J.; Lee, Florence L.
 CS Dep. Chem., State Univ. New York, Binghamton, NY, 13901, USA
 SO Journal of the American Chemical Society (1985), 107(24), 7219-21
 CODEN: JACSAT; ISSN: 0002-7863

DT Journal
 LA English



AB PhC.tplbond.CSiMe3 reacted with Cp2TiCl2 (Cp = η^5 -cyclopentadienyl) and MeAlCl2 to give the alkenyl Ti complex I. The x-ray crystal structure of I showed the Ti, Si, vinyl carbons, and the Me and Cl-Ph carbons were essentially planar. ¹H, ¹³C, and ²⁷Al NMR spectroscopy showed I was the first and only insertion product formed in this reaction. Cp2TiCl2 and MeAlCl2 gave Cp2TiCl(μ-Cl)AlCl2Me (II), as confirmed by x-ray crystallog. Cp2TiMe+ AlCl4-, formed by dissociation of II, was proposed as the active catalyst for Ziegler polyim systems.

L4 ANSWER 41 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1985:596144 CAPLUS

DN 103:196144

OREF 103:31613a,31616a

TI Complexes of alkali earth metal halides with alkyl aluminum dihalides

AU Giannini, U.; Albizzati, E.; Zucchini, U.

CS Montedison Group, Ist. G. Donegani S.p.A., Novara, 28100, Italy

SO Inorganica Chimica Acta (1985), 98(3), 191-4

CODEN: ICHAA3; ISSN: 0020-1693

DT Journal

LA English

AB The reaction of MX2 (M = Mg, Ca, Si, Ba; X = Cl, Br, I) with RAlX2 (R = Me, Et, Bu; X = Cl, Br, I) gave 72.4-97.0% MX2.nRAlX2 (n = 1-4).

L4 ANSWER 42 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1985:415936 CAPLUS

DN 103:15936

OREF 103:2527a,2530a

TI Mononuclear and binuclear cationic complexes of vanadium(II)

AU Cotton, F. Albert; Duraj, Stan A.; Manzer, Leo E.; Roth, Wieslaw J.

CS Dep. Chem., Texas A and M Univ., College Station, TX, 77843, USA

SO Journal of the American Chemical Society (1985), 107(13), 3850-5

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

AB A method for the high-yield preparation (≤99%) of the new [(THF)3V(μ-Cl)3V(THF)3]AlCl2R2 (I; R = Et or Me) is described. I (R = Et) reacts instantaneously with MeOH to give a blue solution from which, depending upon the workup, [V(MeOH)6]Cl2 (II) or VC12(MeOH)4 can be obtained. With PMe3, I (R = Et) readily affords [(PMe3)3V(μ-Cl)3V(PMe3)3]AlCl2Et2 (III). Crystals of I (R = Et) diffracted poorly, and the structure could not be satisfactorily refined because of severe disorder in the THF ligands as well as in [Et2AlCl2]-. The structure was solved, however, and refined sufficiently to define V2(THF)6(μ-Cl)3+ cation and Et2AlCl2- anion unambiguously but not accurately. Further characterization came from elemental anal. on all 6 elements of I (R = Et) and its UV spectrum. II crystallizes in space group P21/n with a 6.993(3), b 10.809(4), c 10.298(4) Å, β 97.00(3)°, Z = 2. II represents the first example of a homoleptic V(II) alcoholate to be fully characterized by x-ray crystallog. For III the orthorhombic unit cell

(space group Pnma) has a 12.705(2), b 12.522(4), c 28.554(9) Å, and Z = 4. The V-V' distance (in III) is 3.103(4) Å.

L4 ANSWER 43 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1984:409562 CAPLUS

DN 101:9562

OREF 101:1573a,1576a

TI Purifying aluminum chloride

IN Tkachenko, A. F.; Groshev, G. L.; Bodrikov, I. V.

PA USSR

SO U.S.S.R.

From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1984, (13), 63-4.

CODEN: URXXAF

DT Patent

LA Russian

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	SU 1084248	A1	19840407	SU 1982-3409943	19820324 <--
PRAI	SU 1982-3409943		19820324		
AB	The degree of purification of AlCl ₃ is increased by using RAlCl ₂ (R = Me or Et) as a solvent for recrystn.				

L4 ANSWER 44 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1984:6762 CAPLUS

DN 100:6762

OREF 100:1167a,1170a

TI Studies on tungsten hexacarbonyl and (arene)tungsten tricarbonyl derived catalysts in metathesis of linear olefins. IR and proton NMR investigation on systems: (arene)tungsten tricarbonyl + RAlCl₂ + oxygen (O₂)

AU Korda, Anna; Giezyński, Roman

CS Pac. Chem., Polytech. Univ., Warsaw, 00662, Pol.

SO Polish Journal of Chemistry (1982), 56(4-5-6), 849-54

CODEN: PJCHDQ; ISSN: 0137-5083

DT Journal

LA English

GI For diagram(s), see printed CA Issue.

AB LW(CO)₃ (L = benzene, mesitylene) form adducts I and II (R = H, Me in each case) with EtAlCl₂. Similar results were obtained with MeAlCl₂. Addition of O₂ to I and II facilitates arene dissociation. These results were discussed in terms of the metathesis catalysts formed from LW(CO)₃, RAlCl₂, and O₂. W(CO)₆ did not form an adduct with EtAlCl₂.

L4 ANSWER 45 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1983:16806 CAPLUS

DN 98:16806

OREF 98:2727a,2730a

TI Multiple metal-carbon bonds. 27. Preparation of tungsten(VI) phenylimido alkyl and alkylidene complexes

AU Pedersen, Steven F.; Schrock, Richard R.

CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA

SO Journal of the American Chemical Society (1982), 104(26), 7483-91

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

AB Phenylimido neopentylidene complexes (PhN)W(CHCMe₃)L₂Cl₂ (I; L = PMe₃, PET₃) were prepared by treating (PhN)W(OCMe₃)₄ with (Me₃CCCH)TaL₂Cl₃. [(PhN)W(CHCMe₃)L₂R]⁺ (R = Cl, Me), (PhN)W(CHCMe₃)(OCMe₃)₂L and (PhN)W(CHCMe₃)(L)₂Cl₂ were prepared straightforwardly from I. (PhN)WNp₃Cl₁

(II; Np = CH₂CMe₃) was prepared from (PhN)WC14 and NpMgCl, and (PhN)W(CHCMe₃)Np₂ and CpW(NPh)(CHCMe₃)Np were prepared from II by α-H abstractions. II reacts with L.HCl (L = PMe₃, py) in the presence of excess L to give I, presumably via unobservable (PhN)WNP₂(L)Cl₂. (PhN)W(CH₂SiMe₃)₄, which can be prepared from (PhN)W(CH₂SiMe₃)₃Cl and LiCH₂SiMe₃, decomps. smoothly in a 1st-order reaction to give (PhN)W(CHSiMe₃)(CH₂SiMe₃)₂ while (PhN)W(CH₂SiMe₃)₂Cl₂ reacts with L = PMe₃ or PET₃ to give (PhN)W(CHSiMe₃)₂Cl₂. The preparation of several miscellaneous phenylimido alkyl complexes such as (PhN)WR₃Cl (R = Me, Bz), CpW(NPh)Me₃, (PhN)WR₃(OCMe₃) (R = Me, Bz, Np), and the product of [(PhN)W(CHCMe₃)(PMe₃)₂Me][AlMe₂Cl₂] decomposition, (PhN)W(CCMe₃)(PMe₃)₂Cl(AlMe₂Cl) is also reported.

L4 ANSWER 46 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1982:544902 CAPLUS

DN 97:144902

OREF 97:24140h,24141a

TI Gas-phase positive-ion chemistry of trimethylboron and trimethylaluminum

AU Kappes, Manfred M.; Uppal, Jack S.; Staley, Ralph H.

CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA

SO Organometallics (1982), 1(10), 1303-7

CODEN: ORGN7; ISSN: 0276-7333

DT Journal

LA English

AB Me₂B⁺ and Me₂Al⁺ are the principal ions produced by electron impact on Me₃B and Me₃Al, resp. Study of halide transfer to these cations leads to determination of their halide (Cl⁻ and F⁻) affinities. These show approx. 9 kcal/mol greater stability for Me₂Al⁺ compared to Me₂B⁺. Me₃B reacts by Me⁻ transfer with CF₃⁺ and CF₂Cl⁺, but not with CC1₃⁺, Me₂CH⁺ or CHCl₂⁺, establishing a value for the Me⁻-anion affinity of Me₂B⁺. In a related reaction also involving C-C bond formation, CHCl₂⁺ and CFC1₂⁺ are alkylated with Me₃Al to give MeCHCl⁺ and MeCFC1⁺, resp. Other thermochem. detns. include the hydride affinity of Me₂B:CH₂⁺. A variety of mols. (L) condense with Me₂B⁺ to yield 1-ligand complexes, and with Me₂Al⁺ to yield 2-ligand complexes. The relative order of ligand-binding energies for these mols. to both species is determined from the preferred direction of displacement reactions: for Me₂B(L)⁺, Me₂S < MeCN < PhOMe < Me₂O < PhCN < pyridine, and for Me₂Al(L)₂⁺, Me₃Al < Me₂S < PhOMe < Me₂O < MeCN < Et₂O = (Me₂CH)₂O < PhCN < Me₃N < pyridine. The relative position of MeCN in these series indicates that Me₂Al⁺ is a relatively softer acid than Me₂B⁺ or Al⁺.

L4 ANSWER 47 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1982:122857 CAPLUS

DN 96:122857

OREF 96:20181a,20184a

TI α-Hydride elimination: the first observable equilibriums between

alkylidene complexes and alkylidyne hydride complexes

AU Churchill, Melvyn Rowen; Wasserman, Harvey J.; Turner, Howard W.; Schrock, Richard R.

CS Dep. Chem., State Univ. New York, Buffalo, NY, 14214, USA

SO Journal of the American Chemical Society (1982), 104(6), 1710-16

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

AB (Me₃CCH:)Ta(dmpe)Cl₃ (dmpe = Me₂PCH₂CH₂PM₂) is reduced by Na amalgam in the presence of dmpe to give (Me₃CCH:)Ta(dmpe)₂Cl (I). The Me₃CCH: ligand is grossly distorted toward a neopentylidyne-hydride system, as evidenced by the low value for νCH_a (2200 cm⁻¹) and JCH_a (57 Hz). Addition of Me₃AlCl₃-x reagents generates Al-stabilized neopentylidyne hydride complexes. The crystal structure of complex (Me₃CC)TaH(dmpe)₂(ClAlMe₃) was determined. The Ta atom has a

pentagonal-bipyramidal coordination geometry, with 2 dmpe ligands and the hydride ligand [Ta-H = 1.80 (5) Å] in the equatorial plane. The neopentylidene ligand [Ta.tplbond.C = 1.850 (5) Å] and a Cl-AlMe₃ ligand [Ta-Cl = 2.768 (2) Å] occupy the 2 axial sites. Replacing the chloride in I with iodide produces a product which at 200 K is approx. a 9:1 mixture of (Me₃CC)Ta(H)(dmpe)₂I and (Me₃CCH)Ta(dmpe)₂I. At 335 K it is approx. a 1:1 mixture of the 2, and they interconvert rapidly on the NMR time scale. Replacing the chloride with triflate produces a mixture which contains <50% (Me₃CCH)Ta(dmpe)₂(O₃SCF₃) at 355 K.

L4 ANSWER 48 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1982:35460 CAPLUS

DN 96:35460

OREF 96:5873a,5876a

TI Synthesis and characterization of tungsten oxo neopentylidene complexes

AU Wengrovius, Jeffrey H.; Schrock, Richard R.

CS Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA

SO Organometallics (1982), 1(1), 148-55

CODEN: ORGND7; ISSN: 0276-7333

DT Journal

LA English

AB (Me₃CCH:)Ta(PR₃)₂X₃ (X = Cl, Br; R₃ = Me₃, Et₃, Me₂Ph) react with W(O)(OCMe₃)₄ to give [(Me₃CO)₄TaX]₂ and (Me₃CCH:)W(O)(PR₃)₂X₂ (I). The R₃P ligands in I are trans and the oxo and neopentylidene ligands are cis to one another. Five-coordinate complexes can be prepared by scavenging 1 R₃P ligand with (PhCN)₂PdCl₂. Addition of 1 or 2 equiv AlCl₃ to I (X = Cl, R = Et) (II) in CH₂Cl₂ yields mono- and dicationic complexes, resp. Adding Me₃Al to II gave unstable [(Me₃CCH:)W(O)(Me)(PEt₃)₂]+ (Me₂AlCl₂)⁻, which on treatment with Me₂NCH₂CH₂NMe₂ (L) yields (Me₃CCH:)W(O)(L)(Cl)(Me). Attempts to prepare cationic complexes with BF₄⁻ or PF₆⁻ counterions yielded fluoride complexes. Complexes containing tert-butoxide ligands in place of halides were prepared by several routes. Phosphine-free, unstable [(Me₃CCH:)W(O)(OCMe₃)₂]₂ and other phosphine-free complexes [e.g., (Me₃CCH:)W(O)(L)Cl₂ and (Me₃CCH:)W(O)(S₂CNMe₂)₂] were also prepared

L4 ANSWER 49 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1981:46816 CAPLUS

DN 94:46816

OREF 94:7625a,7628a

TI Alkylaluminum chloride induced cyclization of unsaturated carbonyl compounds

AU Karras, Michael; Snider, Barry B.

CS Dep. Chem., Princeton Univ., Princeton, NJ, 08544, USA

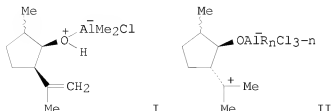
SO Journal of the American Chemical Society (1980), 102(27), 7951-3

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA English

GI



AB 2,6-Dimethyl-5-heptenal undergoes a concerted ene reaction with 1 equivalent

of Me₂AlCl at -80° to give I and a cation-olefin cyclization with 2 equivalent of Me₂AlCl, MeAlCl₂, or EtAlCl₂ to give a zwitterion II (R = Me, Et; n = 1,2) whose further reactions depend on the Lewis acid used and the temperature. 6,7-Unsatd. ketones undergo ene reactions with Me₂AlCl as catalyst whereas 4,5- and 5,6-unsatd. ketones undergo cation-olefin cyclization with 2 equivalent of MeAlCl₂ to give a zwitterion which undergoes a 1,2-hydride shift, followed by a 1,2-Me shift, to give a cyclopentanone.

L4 ANSWER 50 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1979:23161 CAPLUS

DN 90:23161

OREF 90:3835a,3838a

TI Regiospecific and stereoselective carbometalation of alkynylsilanes by Ziegler-Natta alkylating agents

AU Eisch, John J.; Manfre, Robert J.; Komar, David A.

CS Dep. Chem., State Univ. New York, Binghamton, NY, USA

SO Journal of Organometallic Chemistry (1978), 159(4), C13-C19

CODEN: JORCAI; ISSN: 0022-328X

DT Journal

LA English

OS CASREACT 90:23161

AB A 1:1 combination of dichloro(bis-η⁵-cyclopentadienyl)titanium and alkylaluminum halides in methylene chloride solution effects the regiospecific alkylation of alkynyl(trimethyl)silanes in 60-95% yields. With RC.tplbond.CSiMe₃ substrates, where R = saturated alkyl group, the carbometalation (introduction of a Me or an Et group) occurs regiospecifically and stereoselectively in a trans-manner, giving a 75:25 to a 90:10 ratio of isomers. When the R in RC.tplbond.CSiMe₃ is Ph or 1-cyclohexenyl, then a non-stereoselective carbometalation is observed (50:50 mixts. of isomers). These results, which are explicable in terms of the formation of the (C₅H₅)₂Ti+R cation and its attack on the alkynylsilane, offer stereochem. evidence for a cationic initiating step in the polymerization of ethylene by homogeneous Ziegler-Natta catalysts.

L4 ANSWER 51 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1978:105552 CAPLUS

DN 88:105552

OREF 88:16565a,16568a

TI Cuprous organoaluminum and cuprous organoboron complexes and uses thereof

PA Exxon Research and Engineering Co., USA

SO Brit., 9 pp.

CODEN: BRXXAA

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1484775	A	19770908	GB 1975-1067	19750110 <--
PRAI	GB 1975-1067	A	19750110		

AB CuAlRCl₂R₁.nL (I; R = Me, Et, iso-Bu; R₁ = Cl, Br; n = 1, 2; L = cyclohexene, 1-pentene, C₆H₆) were prepared from CuR₁Cl₂ by treatment with RAlCl₂ in L. CH₂:CH₂ and MeCH:CH₂ were separated from mixts. with C₂H₆ and propane, resp., by ligand exchange with I. Thus, a mixture of 53 mol % CH₂:CH₂ and 47 mol % C₂H₆ was contacted with CuAlEtCl₃.2C₆H₆ at 24° and 1 atm; when the solution was saturated, it was heated to 45° under N. The decomplexed product contained 95 mol % CH₂:CH₂. Apparatus for the ligand exchange process is described.

L4 ANSWER 52 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1977:535956 CAPLUS

DN 87:135956

OREF 87:21557a,21560a

TI Adducts of π -allyl compounds of transition metals, Lewis bases, and/or Lewis acids
 IN Wilke, Guenther
 PA Studiengesellschaft Kohle m.b.H., Fed. Rep. Ger.
 SO Ger., 10 pp. Division of Ger. 1,520,964.
 CODEN: GWXXAW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1793788	A1	19741121	DE 1967-1793788	19630810 <--
	DE 1793788	B2	19770113		
	DE 1793788	C3	19770901		
PRAI	DE 1967-1793788	A	19630810		

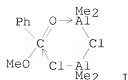
AB Adducts of π -allylmetal compds. such as LMX (L = π -allyl, M = Cr, Co, Ni, Pd, X = Cl, Br iodo) and L2M, with Al halides such as AlBr₃, AlCl₃, EtAlCl₂, Et₂AlCl, and MeAlCl₂ catalyzed polymerization and oligomerization of alkenes such as ethylene, propylene, butadiene, cyclohexene, and 1-butene. Adducts of π -allylmetal compds., Al halides, and R3P (R = Ph, cyclohexyl, Et, Me₂CH, Et₂N, o-cresyloxy, PhO, etc.) similarly catalyzed such polymns.

L4 ANSWER 53 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1977:406204 CAPLUS
 DN 87:6204
 OREF 87:1005a,1008a
 TI Organocopper complexes containing aluminum or boron
 PA Exxon Research and Engineering Co., USA
 SO Jpn. Kokai Tokkyo Koho, 11 pp.
 CODEN: JKXXAF
 DT Patent
 LA Japanese
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 51086425	A	19760729	JP 1975-7652	19750117 <--
	JP 59038208	B	19840914		
PRAI	JP 1975-7652	A	19750117		

AB CuX (X = Cl, Br) and RAlCl₂ (R = Me, Et, iso-Bu) were treated at -20° in a solvent Q (Q = C₆H₆, PhMe, cyclohexene) to give complexes CuAlRCl₂X₂Q (I, Q as above), which on treating with propylene (II) or a mixture of II and propane at room temperature, gave I (Q = II), which liberated pure II on heating to 100°. Similarly I (Q = ethylene) was prepared.

L4 ANSWER 54 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1976:560218 CAPLUS
 DN 85:160218
 OREF 85:25657a,25660a
 TI Complexes of carbonyl compounds with RnAlX_{3-n} compounds. IV. The evidence for the formation of cyclic complexes with chloroaluminum compounds
 AU Starowieyski, K. B.; Pasynkiewicz, S.; Sporzynski, A.
 CS Inst. Org. Chem. Technol., Tech. Univ. Warsaw, Warsaw, Pol.
 SO Journal of Organometallic Chemistry (1976), 117(2), 117-28
 CODEN: JORCAI; ISSN: 0022-328X
 DT Journal
 LA English
 GI



AB Reasonably stable 1:2 complexes (e.g., I) are formed by carbonyl compds. with chloroaluminum compds., usually in equilibrium with a 1:1 complex; however with Me₃Al only a 1:1 complex is formed. In the case of complexes with an excess of MeAlCl₂, a disproportionation reaction occurs. Possible structures are discussed in light of PMR and ir spectroscopy, dipole moments and mol. weight determination

L4 ANSWER 55 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1975:479317 CAPLUS

DN 83:79317

OREF 83:12462h,12463a

TI Reactions of methylaluminum compounds with benzyl cyanide

AU Pasyankiewicz, Stanislaw; Kuran, Witold; Zbierzchowska, Anna

CS Inst. Org. Chem. Technol., Tech. Univ. Warsaw, Warsaw, Pol.

SO Justus Liebigs Annalen der Chemie (1975), (4), 636-41

CODEN: JLACBF; ISSN: 0075-4617

DT Journal

LA German

OS CASREACT 83:79317

GI For diagram(s), see printed CA Issue.

AB MeAlCl₂ and Me₂AlCl reacted with PhCH₂CN via elimination of CH₄ and formation of PhCH₂C(:NAlCl₂)CHPhCN and trimer I and II.

PhCH₂CMe:NAlMen-1Cl₃-n was formed by rearrangement of PhCH₂CN.AlMenCl₃-n (n = 1-3).

L4 ANSWER 56 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1975:410398 CAPLUS

DN 83:10398

OREF 83:1749a,1752a

TI Complex aluminum compounds and alkyl phosphorus halides

IN Coates, Harold; Waring, Derek M. H.

PA United Kingdom Ministry of Supply, UK

SO U.S., 2 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3840576	A	19741008	US 1952-303431	19520808 <--
	GB 1344051	A	19740116	GB 1951-18813	19510809 <--
PRAI	GB 1951-18813	A	19510809		

AB The reaction of MeAlCl₂ with PCl₃ gave MePCl₂.AlCl₃, which, treated with PhCH₂CN gave MePCl₂ (I). Similarly Me₂AlCl and PCl₃ gave [MePCl₂]₂AlCl₃, which, treated with POC₂Cl₃ gave I. Methylaluminum sesquichloride and PCl₃ gave [MePCl₂]₃[Al₂Cl₆], which, treated with PhCH₂CN gave I.

L4 ANSWER 57 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1975:410375 CAPLUS

DN 83:10375

OREF 83:1745a,1748a

TI Organometal complexes

IN Kroll, Wolfram R.; Long, Robert B.

PA Exxon Research and Engineering Co., USA
 SO U.S., 8 pp.
 CODEN: USXXAM
 DT Patent
 LA English
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3868398	A	19750225	US 1970-65957	19700821 <--
PRAI	US 1970-65957	A	19700821		
AB	The complexation of CuCl with AlCl ₃ in an unsatd. solvent, Q, gave cuprous alkylchloroaluminates, CuAlRCl ₃ .2Q (R, Q given: Me, toluene; Et, cyclohexene; Me ₂ CHCH ₂ , cyclohexene; Me, 1-pentene). Ethylene was purged of ethane by use of CuAlEtCl ₃ .2benzene and propylene was purged of propane by use of CuAlMeCl ₃ in benzene.				

L4 ANSWER 58 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1974:121098 CAPLUS
 DN 80:121098
 OREF 80:19495a,19498a
 TI Dichloromethylphosphine
 IN Coates, Harold; Waring, Derek M. H.
 PA Minister of Supply, London
 SO Brit., 3 pp.
 CODEN: BRXXAA
 DT Patent
 LA English
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 1344051	A	19740116	GB 1951-18813	19510809 <--
	US 3840576	A	19741008	US 1952-303431	19520808 <--
PRAI	GB 1951-18813	A	19510809		
AB	MeAlCl ₂ , Me ₂ AlCl, or an equimol. mixture of the chlorides with PCl ₃ gave complexes which with PhCH ₂ CN or POC ₃ gave MePCl ₂ . Thus, 2.36 mole PCl ₃ was treated with 325 g (2.36 mole) MeAlCl ₂ in petroleum ether to give MePCl ₂ .AlCl ₃ . The complex (120 g) was added to 250 ml PhCH ₂ CN at 20-5° to give 80% MePCl ₂ .				

L4 ANSWER 59 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1971:141995 CAPLUS
 DN 74:141995
 OREF 74:22951a,22954a
 TI Complexes of plumbous chloride and dimethyllead dichloride with methylaluminum dichloride
 AU Boleslawski, M.; Pasynkiewicz, S.; Pszonka, H.
 CS Inst. Org. Chem. Technol., Tech. Univ., Warsaw, Pol.
 SO Journal of Organometallic Chemistry (1971), 28(3), C31-C33
 CODEN: JORCAI; ISSN: 0022-328X
 DT Journal
 LA English
 AB PbCl₂ and MeAlCl₂ formed the stable complex PbCl₂.2AlMeCl₂; treatment of the latter with PhCN gave PbCl₂ and 2PhCN.AlMeCl₂. Me₂PbCl₂ and MeAlCl₂ yielded the analogous Me₂PbCl₂.2AlMeCl₂, which was associated in C₆H₆. The shift in the NMR signal of the Me group on the Al in these complexes, relative to free MeAlCl₂, was comparable to that in 2PhCN.AlMeCl₂.

L4 ANSWER 60 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1968:2989 CAPLUS
 DN 68:2989
 OREF 68:571a
 TI Methyl, aryl, and aralkyl derivs. from metals of Group II-V

IN Sundermeyer, Wolfgang; Verbeek, Wolfgang
 PA Th. Goldschmidt AG
 SO Ger., 5 pp.
 CODEN: GWXXAW
 DT Patent
 LA German
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 1239687 FR 1470956 GB 1132037 US 3480654		19670503	DE 1965-S95928 FR GB US	19650312 <-- 19660311 <--
AB	<p>The title compds. can be prepared by treating the corresponding Me, aryl, or aralkyl halide with metal halides in molten nonoxidizing salt mixts. For this variation of the classical Wurtz synthesis, the metallic acceptor for halogen can be added to the mixture or can be obtained from the conducting salt by means of electrolysis. The second path yields the acceptor in a highly dispersed form. The metal halide formed during the reaction remains in solution. Thus, 270 g. Al is suspended in 2000 g. of a eutectic mixture from NaCl and AlCl₃. MeCl (180 g.) is passed into the solution over 5 hrs. to yield 96% MeAlCl₂, m. 73°. Similarly, 270 g. Al is suspended in 1919 g. of an equimolar mixture from NaCl and AlCl₃. NaCl (292 g.) is added and at 220° 374 g. MeCl is added. Introduction of 170 g. MeSiCl₃ during 7 hrs. yields 91 g. SiMe₄, b. 26°.</p> <p>Alternatively, 3000 g. of an equimolar mixture from NaCl and AlCl₃ are electrolyzed with 368.2 amp./hr. at 220° for 12 hrs. to give 125.5 g. Al and 447 g. Cl. MeCl (350 g.) is passed into the solution during 4 hrs. and 240 g. SiCl₄ vapor is blown into the solution over 8 hrs. to give 94.5 g. SiMe₄. Me₄Sn is obtained in 95% yield from 220 g. SnCl₄ at 200° using the same procedure; similarly, 99% Me₃B is formed from 138 g. BCl₃ at 150°. Me₄Ge is obtained in 97% yield from 218.5 g. GeCl₄ at 180° in 5 hrs. and 77.5 g. AsMe₃ from 580 g. AsCl₃ over 10 hrs.</p> <p>Addition of 420 g. of a dry equimolar mixture from ZnCl₂ and KCl after electrolysis and MeCl introduction yields, after a total 8 hrs. at 150°, 76.5% ZnMe₂. By these methods are prepared HgMe₂, Me₂PCl₂.AlCl₃, and Me₂PCl₂.2AlCl₃. Al amalgam from 2600 g. Hg and 300 g. Al is covered with 1500 g. molten NaCl. A mixture from 139 g. MeCl and 137 g. Me₃SiH is stirred into the solution at 220° to give SiMe₄ in 75% yield. Under these conditions only 35% of the starting material reacted. Alternatively, 3.5 moles NaCl/KCl and 10 moles Al are stirred into a molten mixture from 35:15:15 mole % NaCl/KCl/AlCl₃. The mixture is topped with 400 g. PhBr at 140°. Stirring for 10 hrs. yields Na(PhAlCl₂Br). After evaporation of 10% excess PhBr under reduced pressure 125 g. Me₃SiCl is passed into the solution with vigorous stirring to give 97% SiMe₄. Alternatively, 97 g. Mg powder is treated in 2000 g. of an equimolar molten mixture from NaCl and AlCl₃ with 107 g. PhCl at 200°. Subsequently, 80 g. Me₃SiCl are passed into the solution to yield 12 g. SiMe₄, 4 g. Me₃SiCl, 28 g. PhSiMe₃, and 13 g. Ph₂. Liquid Sn (1500 g.) is placed into 924 g. KCl and 4550 g. SnCl₂ and 210 g. MeCl passed into the solution at 300° to give 54.5% Me₃SnCl, b. 163-5°. Sn (3800 g.) in a molten mixture from 822 g. LiCl and 938 g. KCl is electrolyzed at 400° until 90 g. Li are dissolved in the Sn. A Si cathode and a W anode are used. Subsequently, 100 g. MeCl and 100 g. MeSiCl₃ are passed into the solution to give 6 g. SiMe₄ and 22 g. Me₃SiCl. If an equimolar mixture from PhCl and Me₃SiCl is used, PhSiMe₃ is obtained in 25% yield. Similarly, 3400 g. Pb is added to a molten mixture from 1055 g. LiCl and 938 g. KCl. Electrolysis is carried out at 400° using Pb as cathode and W as anode. After 60 g. Li passed into the lead, 100 g. MeCl and 100 g. MeSiCl₃ are blown into the solution to give 7 g. SiMe₄ and 31 g. Me₃SiCl. An equimolar mixture from PhCl and Me₃SiCl yields 28% Me₃SiPh. Al (54 g.) is suspended in 80 g. of an equimolar mixture from NaCl and</p>				

AlCl₃, 152 g. MeCl passed into the solution at 220°, and 255 g. SiCl₄ added to the closed system over 2 hrs. The pressure rose to 30 atmospheric After 10 hrs. 60% Me₂SiCl₂, 10% Me₃SiCl, 10% MeSiCl₃ and 20% SiCl₄ are obtained. More Al and MeCl for the same quantity of SiCl₄ and longer reaction times increase the yield of Me₂SiCl₂. Al (54 g.) is suspended in 500 g. of an equimolar mixture from NaBr and AlBr₃ and 150 g. PhBr passed into the solution at 220° to give Na(PhAlBr₃). Addition of 100 g. Me₃SiBr gives 46 g. PhSiBr₃. Sn(CH₂Ph)₄, m. 43°, (67 g.) is obtained when 130 g. PhCH₂Cl is passed into a molten mixture from 924 g. KCl, 4550 g. SnCl₂, and 1500 g. Sn at 300° over 5 hrs.

L4 ANSWER 61 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1967:73640 CAPLUS

DN 67:73640

OREF 67:13887a,13890a

TI Organometallic compounds. XLV. Complex formation and reactions of methylaluminum compounds with diglyme

AU Lehmkuhl, Herbert; Schaefer, Rolf

CS Max-Planck-Inst. Kohlenforsch., Muelheim-Ruhr, Fed. Rep. Ger.

SO Justus Liebigs Annalen der Chemie (1967), 705, 23-31

CODEN: JLACBF; ISSN: 0075-4617

DT Journal

LA German

OS CASREACT 67:73640

AB cf. preceding abstract Complexes were formed from 2,2'-dimethoxydiethyl ether with AlMe₃, AlMe₂Cl, and AlMeCl₂. The 1:2-adducts were stable while the 1:1 and 1:3-complexes gave up excess component on heating in vacuo to form the 1:2-complexes. Disproportionation to Me-rich compounds was observed on heating the complexes of AlMe₂Cl and AlMeCl₂. Diglyme reacted with Al and AlEt₃ to evolve C₂H₄. With AlMe₂H, MeOEt, diglycol mono-Me ether and CH₄ were formed.

L4 ANSWER 62 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1967:463561 CAPLUS

DN 67:63561

OREF 67:11915a,11918a

TI Nuclear magnetic resonance spectra of methyl aluminum chloride-donor complexes in the presence of a small excess of methyl aluminum chloride or donor

AU Wanders, A. C. M.; Konijnenberg, E.

CS Central Lab., Staatsmijnen/DSM, Geleen, Neth.

SO Tetrahedron Letters (1967), (22), 2081-7

CODEN: TELEAY; ISSN: 0040-4039

DT Journal

LA English

AB N.M.R. spectra (A, B, C) of 1.0M MeAlCl₂.(Me₂CH)₂O and 1.0M AlCl₃.(Me₂CH)₂O; of the same mixture and 0.025M (MeAlCl₂)₂; and of the same mixture and 0.05M (Me₂CH)₂O were recorded at 30° in C₆H₆. C showed the characteristic pattern of the iso-Pr₂O group, whereas B showed a superposition of 2 iso-Pr₂O signals with the chemical shift between the tertiary H septets equal to the proton-proton coupling constant (6.6 Hz.). A resembled B with broadened signals and a smaller separation between iso-Pr₂O signals. A and B indicated a net exchange of iso-Pr₂O mols. between the 2 complexes and comparison with C suggested the necessity for the presence of free iso-Pr₂O mols. for the exchange reaction, on the assumption that the exchange of complexed and free iso-Pr₂O mols. is faster than the direct exchange of ether mols. between the 2 complexes. The assumption was confirmed by the temperature dependence of I in which the isopropyl doublets

completely coalesce and the 2 septets broaden and move towards each other, so that at 50° the mean life of an ether mol. bonded to either of the Al compounds is between 0.03 and 0.08 sec. These and other results

(Swift, et al., CA 61: 10207a; Mole and Surtees, 61: 13326b) show that a variety of exchange mechanism must be taken into account.

L4 ANSWER 63 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1967:28882 CAPLUS

DN 66:28882

OREF 66:5515a,5518a

TI Organometallic compounds of aluminum, silicon, germanium, tin, or lead with methyl groups

IN Wartik, Thomas; Barnes, Robert Lee

PA Koppers Co., Inc.

SO U.S., 8 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3288828		19661129	US	19630226 <--
AB	The title compds. are useful as fuel additives, catalysts, and intermediates. E.g., 37.4 millimoles aluminum carbide (Al4C3) was placed in the furnace of a dry flow reactor under N, the furnace was heated to 300°, 69.5 millimoles HCl was passed through the furnace at a controlled flow rate under anhydrous oxygen-free conditions, the products were passed through first trap cooled to -78° and a second trap cooled to -196°, and the substances in the first trap were redistd. to yield MeAlCl2 m. 72.5-3.7°. Group IVA metal halides could be methylated by treating Al4C3 and HCl with the Group IVA metal halides. E.g., 3.6 moles HCl, 1 mole Al4C3, and 1.1 moles SiCl4 was treated at 150-200° under anhydrous conditions to yield 44.2 g. MeI-2SiCl3-2 b. 57-62°.				

L4 ANSWER 64 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1966:52207 CAPLUS

DN 64:52207

OREF 64:9768c-d

TI Tetraalkyllead process

IN Beaird, Francis M., Jr.; Kobetz, Paul

PA Ethyl Corp.

SO 4 pp.

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3226409		19651228	US 1963-318081	19631022 <--
PRAI	US		19631022		
AB	In the process for preparing Me4Pb (CA 57, 16656c) from NaPb alloy and MeCl in an inert solvent in the presence of a catalyst, less difficulty in discharging the reaction mass from the reactor and from fuming of the remaining Al-containing compds. is encountered if the catalyst comprises a trialkylaluminum or alkylaluminum chloride and an alkyl ether polyethylene glycol alcoholate of Na, Li, K, Mg, Ca, or B. When NaPb alloy was treated with a 9-fold excess of MeCl under the usual conditions in the presence of 1.1 weight-% Et3Al and 1.27 weight-% EtO(CH2CH2O)3Na based of NaPb alloy, 93% Me4Pb was obtained. Cf. following abstract				

L4 ANSWER 65 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1965:472177 CAPLUS

DN 63:72177

OREF 63:13316b-c

TI Tetramethyllead preparation using alkyl aluminum-amine catalyst systems

IN Beaird, Francis M., Jr.; Kobetz, Paul
 PA Ethyl Corp.
 SO 3 pp.
 DT Patent
 LA Unavailable
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3188334		19650608	US 1963-318075	19631022 <--
PRAI	US		19631022		

AB Me4Pb is prepared by the reaction of MeCl with an alkali metal Pb alloy in the presence of an alkylaluminum compound and using lower alkyl amines as adjuvants. E.g., when the basic procedure of U.S. 3,188,332 is modified to use only 0.46 weight-% Me3Al2Cl3 and 0.5 mole Bu3N per g.-atom Al, a yield of 70.5% Me4Pb was obtained although the catalyst level was only half the normal amount. The reaction mass did not smoke or fume when exposed to a gaseous atmospheric

L4 ANSWER 66 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1964:429924 CAPLUS
 DN 61:29924

OREF 61:5179b-e

TI Identification of bond types in aluminum and titanium compounds and complexes

AU Sakurada, Vutaka; Huggins, Maurice L.; Anderson, William R., Jr.

CS Inst., Menlo Park, CA

SO Journal of Physical Chemistry (1964), 68(7), 1934-43

CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA Unavailable

GI For diagram(s), see printed CA Issue.

AB The structures of Me Al chlorides and oxidized AlMe3, and the homogeneous reactions of Al Me compds. with TiCl4 and with TiCl3 in tetrahydrofuran (THF) were studied, using n.m.r. (nuclear magnetic resonance) spectra, supplemented by x-ray, infrared, and magnetic susceptibility data. From systematic n.m.r. studies of Me Al chlorides, Al2Me3Cl6-n (n = 2, 3, 4, 5, and 6), it is concluded that Al2Me3Cl3 has structure I, and that Al2Me5Cl consists of an equimolar mixture of III and IV. Structure II has, at most, only a transitory existence. Although rapid intermol. and intramol. exchange of Me are indicated in Me Al chlorides, Al2MenCl6-n (n = 2, 3, 4, 5, and 6), there appears to be no rapid intermol. exchange of Me attached to Al and Me of methoxy groups, in hydrocarbon solns. containing Al2Me6 and (AlMe2OMe)3, at room temperature. In homogeneous solution in THF at room temperature,

AlMe3 (or AlMe2Cl) reacts with TiCl4 to produce AlMe2Cl (or AlMeCl2), TiCl3, and CH4. Reaction between AlMe3 or AlMe2Cl and TiCl3 also proceeds homogeneously in THF. Magnetic susceptibilities of the reaction solns., confirmed by measurements of the chemical shifts in the n.m.r. spectra for the Me protons of Me Al compds., show that the valence state of Ti is still trivalent after these reactions. Evidence for the existence of TiCl2Me was obtained, but no pos. evidence for a complex compound including the 2 different metal atoms, Al and Ti.

L4 ANSWER 67 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN
 AN 1963:403882 CAPLUS

DN 59:3882

OREF 59:765c-e

TI Reaction of α -olefins with soluble catalysts of the Ziegler type and the initiation mechanism of ethylene polymerization

AU Shilov, A. E.; Shilova, A. K.; Bobkov, B. N.

SO Vysokomolekulyarnye Soedineniya (1962), 4, 1688-95

CODEN: VMSDA8; ISSN: 0042-9368

DT Journal
LA Unavailable
AB The hypothesis of the ionic mechanism of initiation of polymerization of α -olefins by the dicyclopentadienyltitanium dichloride-Me₂AlCl system was proved exptl. The spectrum of the system in C₆H₆ showed the presence of the complex (C₅H₅)₂Ti(Me)Cl-MeAlCl₂ (I). Reduction of I in the presence of an α -olefin gave (C₅H₅)₂TiCl₂AlClR₂ (R = alkyl or halogen). By analyzing the gaseous products of I with C₃H₆, it was assumed that after introducing α -olefin on the Ti-Me bond, the reaction proceeds according to the mechanism of intramolecular disproportionation. $2(C_5H_5)_2Ti(Me)Cl \cdot Al(Me)Cl_2 + CH_2:CHR \rightarrow 2(C_5H_5)_2TiClAl(Me)Cl_2 + CH_4 + CH_2:C(Me)R$. In the reaction of I with heptene, there was a linear dependence of [I]^{1/2} on time. Over a wide range, the velocity constant was proportional to the concentration of heptene. Concns. of Me₂AlCl with ratios of Al:Ti from 2:1 to 15:1 exerted little effect on velocity of Ti reduction. The velocity of reduction of the system in the presence of α -heptene and the velocity of polymerization of C₂H₄ were proportional to the increase in elec. conductivity during formation of I.

L4 ANSWER 68 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1963:400497 CAPLUS

DN 59:497

ORF 59:67d,68a-b

TI Coordination polymerization of olefins. Catalyst studies. I. The infrared spectroscopic investigation of the systems (CH₃)₃Al-TiCl₄ and (CH₃)₂Zn-TiCl₄

AU Gray, A. P.; Callear, A. B.; Edgecombe, F. H. C.

CS Du Pont Ltd., Kingston

SO Canadian Journal of Chemistry (1963), 41, 1502-10

CODEN: CJCHAG; ISSN: 0008-4042

DT Journal

LA Unavailable

AB An infrared spectroscopic investigation of the reaction between TiCl₄ and Me₃Al in the vapor phase was carried out at 6 different reactant ratios. The study defined the course of the initial reactions; demonstrated the importance of equilibrium among the products in this system as contrasted with Me₂Zn-TiCl₄; indicated the relative alkylating power of trimethyl, dimethylchloro, and methylchloro aluminum toward TiCl₄ and MeTiCl₃; and supported the view that the active catalyst site in such systems is the Ti-C bond in reduced titanium alkyls. A new mode of decomposition of MeTiCl₃ leading to active catalysts was found which can account for reported variable catalyst activities at Al/Ti ratios less than 1. Individual infrared spectra in the range 1500 to 300 cm.⁻¹ for Me₃Al, Me₂AlCl, MeAlCl₂, MeTiCl₃, and Me₂TiCl₂, as well as those of the initial reaction mixts., are presented.

L4 ANSWER 69 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1962:23081 CAPLUS

DN 56:23081

ORF 56:4347g-h

TI Alkyl aluminum halide complexes with alkali metal halides

AU Sledston, G. J.

CS Imperial Chem. Inds., Ltd., Stevenston, UK

SO Chemistry & Industry (London, United Kingdom) (1961) 1492-3

CODEN: CHINAG; ISSN: 0009-3068

DT Journal

LA Unavailable

AB The complexes MRAIX₃, M = Li, Na, or K; R = Me or Et; X = Cl or Br, were prepared by heating together the alkyl halide and MeAlX₂ or EtAlX₂ in an inert atmospheric. With Na and K halides 2 layers formed, with the complex in

the

lower one. The complexes are white or gray solids, slightly soluble in hydrocarbon, stable at atmospheric pressure but disproportionating and dissociating at lower pressures. They react with air but do not ignite spontaneously; they react violently with H₂O and lower alcs. M.ps. are: K(CH₃)AlCl₃, 150°; Na(CH₃)AlCl₃, 125°; Li(CH₃)AlCl₃, 74°; K(C₃H₅)AlCl₃, 94°; Na(C₂H₅)AlCl₃, 73°; Li(C₂H₅)AlCl₃, 33°.

L4 ANSWER 70 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1961:48356 CAPLUS

DN 55:48356

OREF 55:9282e-g

TI Group IIb organometallic compounds

IN Blitzer, Sidney M.; Pearson, Tillmen H.

PA Ethyl Corp.

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2969381	---	19610124	US 1959-810235	19590501 <--
AB	The title compds. are made by the reaction between the Zn, Cd, or Hg salts of organic acids and an organo B or Al compound. Thus, Et ₃ B 3.9, Hg(OAc) ₂ 6.4, and MeOCH ₂ CH ₂ OMe 70 is stirred under an inert atmospheric, refluxed 2 hrs.,				

after

cooling OH 5 in H₂O 15 added, the heavy liquid phase at the bottom of the reactor withdrawn, and distilled to yield Et₂Hg 3.4 parts. The following compds. are similarly made (compound, group IIb salt, B or Al compound, and diluent given): Et₂Hg, Hg(OAc)₂, Et₃Al, MeOCH₂CH₂OMe; Et₂Cd, Cd(OAc)₂, Et₃Al, Nujol; Et₂Zn, Zn(OAc)₂, Et₃Al, Nujol; (n-C₈H₁₇)₂Hg, Hg(OPh)₂, (n-C₈H₁₇)₃B, (MeOCH₂CH₂)₂O; (CH₂:CH)₂Hg, (n-C₇H₁₅COO)₂Hg, (CH₂:CH)₃B, Et₃N; Et₂Hg, Hg(OAc)₂, NaBEt₄, tetrahydrofuran. Higher yields, purer products, and faster reaction rates make this method superior to those based on alkyl halides or Grignard reagents.

L4 ANSWER 71 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1960:33841 CAPLUS

DN 54:33841

OREF 54:6522i,6523a-d

TI Preparation and ignition properties of aluminum alkyls

AU Marsel, Charles J.; Kalil, Emil O.; Reidlinger, Anthony; Kramer, Leonard

CS New York Univ., New York, NY

SO Advances in Chem. Ser. (1959), 23, 172-83

DT Journal

LA Unavailable

AB To 4 lb. Al turnings in a 12 l. flask, connected to an efficient fractionating column, was added 2 lb. MeI, the whole refluxed until reaction was initiated, 23 lb. MeI added to keep pot temperature at 160° (external heating 24-48 hrs. usually necessary), and the whole distilled to give 50-65% Me₃Al (I), b₁₀₀ 69-72°. Alternately, 320 g. Al foil, cut in small pieces, was treated 1st. with 5-6 ml. MeI, the reaction initiated by heat (temperature rise to 150°) the source of heat removed until the reaction subsided, MeCl introduced so that the internal pressure was equal to or greater than atmospheric pressure, and the temperature kept at 90-120° about 20 hrs. to give 100% mixture (II) of Me₂AlCl and MeAlCl₂. To 24 g. Na under N was added 100 g. II, the whole heated to initiate the reaction (95-100°), the exothermic reaction allowed to subside, and the mixture refluxed 5 hrs. to give 90% I. Al₂Mg (60 g.) was treated 1st with a little MeI to initiate the reaction and then with MeCl for about 30 hrs. to give 80% Me₂AlCl, b. 126-7°. I was unaffected when kept 2 hrs. at 300°F. in an autoclave, but about 30% decomposition

occurred after 6 hrs. at 450°F. and Et3Al was unchanged after 2 hrs. at 300°F. I was without effect in most metals but it attacked plastics (except Kel F and Teflon), silicon rubbers, synthetic and natural rubbers. When I was sprayed into air at 450°F., spontaneous ignition occurred after 0.013 sec. delay; a comparison of delay in ignition (sec.) under the same conditions for several other organometallic compds. was: Me2AlCl, 0.020; Et3Al, 0.040; Et2AlBr, 0.150; Et2Zn, smoke after 0.040; Et3B, 0.020 and (Me2CHCH2)3Al, smoke only. The effects of temperature and pressure on the ignition of I were as follows [temperature (F.), absolute press. (inches Hg), and ignition delay (msec.) given]: 455-60°, 2, 21; 450-60°, 5, 13; 445-60°, 30, 3; and 350-65°, 5, 15. The literature was reviewed. 12 references.

L4 ANSWER 72 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1959:44791 CAPLUS

DN 53:44791

OREF 53:7990b-c

TI Aluminum haloorganic compounds

PA Badische Anilin- & Soda-Fabrik Akt.-Ges.

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 804059		19581105	GB 1956-31572	19561017 <--
AB	R(R'O)AlX, R(ArO)AlX, and RAlX2, where R is an alkyl group, Ar an aryl group, and X a halogen, may be prepared by the reaction of Al or Al-Mg with AlX3 and a dialkyl or alkyl aryl ether at 100-220°/to 100 atmospheric E.g., AlCl3 40, coarse Al powder 20, and Et2O 150 was heated 8 hrs. at 170° in an autoclave to yield Et(EtO)AlCl 96 parts, b1 85°.				

L4 ANSWER 73 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1958:92411 CAPLUS

DN 52:92411

OREF 52:16202d-e

TI Alkylaluminum dihalides

PA Esso Research and Engineering Co.

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 790822		19580219	GB 1956-20578	19560703 <--
AB	MeAlCl2 (I) and EtAlCl2 (II) are prepared in a one-step reaction. When MeCl is passed into 100 g. Al powder, 247 g. AlCl3, and 1 ml. MeI in a flask equipped with Dry Ice condensers, the temperature rises from 61° to 123°. Distillation of the product yields 300 g. I, b100 99-100°, m. 73°. Similarly from Al, AlCl3, EtI, and EtCl is prepared II, b50 105-15°, b0.2 36-46.5°. The AlCl3 can be added incrementally. The products can be extracted from the mixture with n-C7H16.				

L4 ANSWER 74 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1958:92410 CAPLUS

DN 52:92410

OREF 52:16202c-d

TI Organic compounds of aluminum

IN Ziegler, Karl; Koster, Roland; Lehmkuhl, Herbert

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 2844615	19580722	US 1953-379294	19530909 <--
AB	See Brit. 779,874 (C.A. 52, 2050d).			

L4 ANSWER 75 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1957:1529 CAPLUS

DN 51:1529

OREF 51:257a-d

TI Organosilicon compounds. IX. Gas-phase methylation of chlorosilanes

AU Beranek, Ludvik; Bazant, Vladimir

CS Czech, Acad. Sci., Prague

SO Chemicke Listy pro Vedu a Prumysl (1956), 50, 1250-60

CODEN: CLPRAN; ISSN: 0366-6832

DT Journal

LA Unavailable

AB cf. C.A. 50, 14446f. A study of reaction conditions on the course of methylation in the presence of Al supports the reaction scheme suggested by Hurd (C.A. 40, 64977). Treatment of 82.9 g. Al shavings with 153.0 g. MeCl in a Mo glass tube at 345° gave 0.8 g. Me2AlCl, 137.5 g. MeAlCl2, 18.1 g. AlCl3, 18.8 g. CH4, 1.9 g. C2H6, 1.1 g. C2H4, 0.48 g. H, 0.33 g. HCl, and 46.3 g.C. With rising temperature the yields were lowered. Similarly methylated was MeSiCl3 to Me2SiCl2, Me3SiCl, and Me4Si in ams. that varied according to the exptl. conditions. Addition of H brought about an increased conversion. Methylation of Et2SiCl2 at 350° gave Me3SiCl (3.6), Me3SiEt (10.3), Me2EtSiCl (12.4), MeEt2SiCl (I) (10.9), and Et3SiCl (23.2%). Ph2SiCl2 was methylated at 360°, the reaction product dissolved in dry Et2O, ethylated with EtMgCl, and hydrolyzed with 5% HCl to yield 50.7 g. C6H6, 13.3 g. PhMe, 20.5 g. MeEt2SiPh (II), 7.3 g. PhSiEt3, 4.4 g. MePh2SiEt, and 34.35 g. Ph2SiEt2, besides small ams. of Me2SiEt2 and MeSiEt3 and a polymerized thermoplastic residue, b. above 300°, containing 18.43% Si. II, b. 209.5-10.0°, d20 0.8886, nD20 1.4975, was identified by heating 6.31 g. II to 70° for 10 min. with 8.5 mL. concentrated H2SO4 and diluting the mixture with 43.5 mL.

H2O to give 2.9 g. MeEt2SiOSiEt2Me (III), b. 188-90°, d20 0.8388, nD20 1.4199. Treatment of 2.48 g. III dissolved in 4.2 mL. 98.6% H2SO4 with 1.9 g. powdered NH4Cl under stirring and cooling yielded 1.58 g. I.

L4 ANSWER 76 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1956:20180 CAPLUS

DN 50:20180

OREF 50:4197a

TI Methylaluminum dichloride

IN Coates, Harold; Hunter, Wm. H.; Topley, Bryan

PA Minister of Supply

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	US 2712546		19550705	US 1952-308725	19520909 <--
AB	See Brit. 718,198 (C.A. 49, 14023f).				

L4 ANSWER 77 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1955:73613 CAPLUS

DN 49:73613

OREF 49:14023f-g

TI Methylaluminum dichloride

IN Coates, Harold; Hunter, Wm. H.; Topley, Bryan

PA Minister of Supply

DT Patent

LA Unavailable

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 718198		19541110	GB 1951-29139	19511212 <--
AB	Me2AlCl (I) or mixed I and MeAlCl2 (II) in C6H6 treated slowly at 0° with Cl in C6H6 with stirring is converted to II, recoverable by distillation, and the MeCl produced recycled. (Another way to manufacture II is to				
	treat Al with Cl and MeCl.) Thus I 113 g. in C6H6 222 g. at 0° treated with Cl 87 g. in C6H6 300 cc. the C6H6 distilled off after the reaction and the residue fractionated yielded 116 g. II. Cf. C.A. 46, 887d.				

L4 ANSWER 78 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1952:5274 CAPLUS

DN 46:5274

OREF 46:887d-i

TI Ketones from acyl chlorides and alkyl aluminum chlorides. A selective keto-ester synthesis

AU Adkins, Homer; Scanley, Clyde

CS Univ. of Wisconsin, Madison

SO Journal of the American Chemical Society (1951), 73, 2854-6

CODEN: JACSAT; ISSN: 0002-7863

DT Journal

LA Unavailable

OS CASREACT 46:5274

AB p-NCC6H4Me with CrO3 in AcOH-H2SO4 yielded p-NCC6H4CO2H (I), m. 218.5-19.3° (corrected). I refluxed 4 hrs. with 7 equivs. of SOCl2 yielded the acid chloride (II). Convenient procedures are described for the preparation of MeAlCl2 (III), Me2AlCl (IV), Me2AlCl.MeAlCl2 (V), and EtAlCl2 (VI). Attempts to prepare the Pr and Bu compds. were unsuccessful. With simple acid chlorides, RCOCl, only 0.6 mol. III is required for the preparation of the corresponding ketone, RCOME, with a carbalkoxyacyl chloride, R'O2C(CH2)nCOCl, an addnl. equivalent of III is required because it forms a complex with the ester: 1.1 mole III (35% in C6H6) added slowly under N (10-15°) to 0.5 mole ester acid chloride in 1-4 vols. C6H6, and the solution allowed to stand at room temperature 2 hrs., and then run into 500 g.

ice,

or water below 30°, yielded the ketone (Table I). III (27.1 g. as 39% solution in C6H6) added at 45° during 12 min. to 12.2 g. in 150 cc. C6H6, the mixture allowed to stand 30 min. at 50°, hydrolyzed below 30°, and the C6H6 layer distilled yielded 2.45 g. product, b15 210° (not investigated), and 11.9 g. p-cyanobenzophenone, m. 113.5-14.5° (from 60% EtOH); oxime, m. 171.5-4.5°. Table I, RCOCl, Semicarbazone; R Al halide, R, Product, Yield (%), B. p./mm., nD25, m.p.; III, Ph, BzMe, 81, 88-90°/17, 1.5323, 200-1°; V, Ph, BzEt, 89, 139-42°/79, 1.5253, 177.5-8.5°; III, Pr, PrAc, 70, 99-101°/740, -, 109.5-10.5°; IV, Pr, PrAc, 65, 99-101°/740, -, 109.5-10.5°; III, 9-phenanthryl, C14H9Ac, 78, 187°/1, -, oxime 152.5-3.5°; V, 9-phenanthryl, C14H9COEt, 86, 185°/1, -, 53.6-4.7° (free ketone); III, -(CH2)4-, Ac(CH2)4Ac, 35, 115°/13, -, 41-2.5° (free ketone) dioxime 148-51°; III, (CH2)8CO2Et, Ac(CH2)8CO2Et, 93, 118-23°/2, 1.4398, 112.5-13.6°; V, (CH2)8CO2Et, EtCO(CH2)8CO2Et, 94, 133-6°/2, 1.4411, 164.5-66° (free acid); III, (CH2)2CO2Et, Ac(CH2)2CO2Et, 36, 103-4°/25, 1.4214, 100.5-1.5° (a); Bz(CH2)2CO2Et, 38, 125-7°/2, 1.5189, 116-18° (free acid); III, (CH2)2CO2Me, Ac(CH2)2CO2Me, 24, 80.5-81°/12, -, 129.5-31.0° (oxime of free acid); III, (CH2)4CO2Et, Ac(CH2)4CO2Et, 92-5, 73°/1, 1.4304, -, V, (CH2)4CO2Et, Ac(CH2)4CO2Et, 90, 73°/1, 1.4308, -, VI, (CH2)4CO2Et, EtCO(CH2)4CO2Et, 94, 88-93°/2, 1.4329, 88-8.6°; (a)

2,4-Dinitrophenylhydrazine.

L4 ANSWER 79 OF 79 CAPLUS COPYRIGHT 2008 ACS on STN

AN 1940:21187 CAPLUS

DN 34:21187

OREF 34:3236a-i,3237a-b

TI Organoaluminum compounds. I. Methods of preparation

AU Grosse, Aristid V.; Mavity, Julian M.

SO Journal of Organic Chemistry (1940), 5, 106-21

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA Unavailable

AB After a review of the literature on organoaluminum compds. the various methods for their preparation, viz., the reaction of alkyl or aryl halides with Al (I), the reaction of 2 or more Al compds. with each other to produce another (II), and the use of other metals (III), are described and the possible number of compds. formed in these reactions is illustrated. Since organoaluminum compds. are decomposed by moisture and by O the reactions are carried out in an inert dry atmospheric The aliphatic compds. are analyzed by measuring the hydrocarbons evolved on hydrolysis, the aromatic and some aliphatic by determination of the halogen or the Al as 8-hydroxyquinolate. In method I the reaction is carried out in an all-glass apparatus equipped with a stirrer and under cooling. EtCl and Al give a mixture of EtAlCl₂ (IV) and Et₂AlCl (V) which when distilled, using a Poddieniak column, b₂₀ 120-2°, with IV concentrating in the lower-boiling fractions. MeCl and Al give a mixture of Me₂AlCl (VI), b₁₀₀ 70-6°, b₂₀₀ 83-4°, and MeAlCl₂ (VII) which are separated by fractional distillation VII b₁₀₀ 97-101°, m. 72.7° after crystallization from C₅H₁₂. MeBr and Al give Me₂AlBr, b₅₀ 74-7°, which crystallizes on cooling with dry ice, and MeAlBr₂, b₅₀ 124-39°, m. 79° after crystallization from C₅H₁₂. Some disproportionation occurs during the distillation PrI and Al give a mixture of Pr₂AlI (VIII) and PrAlI₂ (IX) which can be partially separated

into

6 fractions: (1) b_{1.0-0.8} 80-128°, containing 77.4% VIII and 22.6% IX; (2) b_{0.8-0.7} 128°, containing 62.9% VIII and 37.1% IX; (3) b_{0.7-0.5} 128-7°; (4) b_{0.5-0.7} 127-42°; (5) b_{0.7-0.5} 142-3° containing 2.5% VIII and 97.5% IX; and (6) b_{0.5-0.4} 143-39° containing 73.7% IX and 26.3% AlI₃. The latter is due to disproportionation. The purest IX, crystallized from C₅H₁₂, m. 3-4°. MeI and Al give a mixture which on distillation at 50 mm. decomps. by disproportionation and gives chiefly

Me₂AlI, b₅₀ 109-10.5°, Me₃Al and AlI₃. EtBr and EtI readily react with Al but no satisfactory separation of the mono- and dialkyl compds. can be obtained. For the next Al derivs. method II is used. When an Et Al sesquichloride (X) distillate containing 21.17 g. V and 36.43 g. IV is heated with 22.8 g. AlCl₃ at 180-90° until a clear solution is obtained, 57.16 g. IV, b₅₀ 114.5-15.5°, m. 32°, is obtained. When to X containing 17.3 g. V and 26 g. IV, 23.09 g. Et₃Al is added, the mixture becomes hot and on fractionation V, b₅₀ 125-6°, in 77% yield, is obtained. Et Al sesquibromide (XI) and AlBr₃ similarly give EtAlBr₂, b₁₀ 120-2.5°, m. 23.5-4.4°. When 18.4 g. Me₂AlI and 38.5 g. AlI₃ are melted together at 170° and distilled at 0.2 mm., strong disproportionation takes place and 11.9 g. MeAlI₂, m. 68-71°, is obtained. Distillation of a mixture of 10 g. Et₃Al and 17.5 g. AlI₃ gives Et₂AlI.

On vacuum fractionation of Et Al sesquiodide disproportionation occurs and fractions containing 97-8% EtAlI₂ and 2-3% Et₂AlI are obtained from which on repeated crystallization from C₅H₁₂, EtAlI₂, m. 39-40°, can be isolated. When a mixture of 6.63 g. Ph₃Al and 6.92 g. AlCl₃ is heated for 20 min. at 200° and then distilled in vacuo, a fraction (27.9 g.) b₇₋₁₅ 103-77°, and a fraction (7.87 g.) b_{15-0.5} 177-208° are obtained. The latter, PhAlCl₂, recrystd. from C₆H₆, m. 93-5.5°.

Sublimation gives white needles, m. 94-5°. In a similar way PhAlBr₂, m. 73.5-8°, is obtained. PhAlI₂ is prepared from PhAl sesquiodide and AlI₃ by heating the mixture for 0.5 hr. at 100° until it becomes completely liquid. It is dissolved in C₆H₆, filtered and concentrated. On standing, PhAlI₂ crystallizes in white prisms, m. 106-10°. p-MeC₆H₄AlI₂ prepared in a similar way m. 140-5°. When 5.8 g. Al(OMe)₃ and 6.95 g. Me₃Al are gradually mixed, considerable heat is evolved. The mixture is heated for 20 min. at 100° and finally at 135°. On distillation the fraction b₁₀ 87-8° consists of Me₂AlOMe, m. 30-3°. MeAl(OMe)₂ is prepared by mixing 6.5 g. Me₃Al and 21.7 g. Al(OMe)₃ and heating the mixture at 280°. On heating a mixture of 3.34 g. Al(OEt)₃ and 4.5 g. AlEt₃ at 170° and distillation, Et₂AlOEt, b₁₀ 108-9°, m. 2.5-4.5°, is obtained. EtAl(OEt)₂, b₁ 137°, is prepared in a similar way from 15.24 g. Al(OEt)₃ and 5.62 g. AlEt₃. By method III, the following Al derivs. are prepared: Et₂AlBr (XII) is prepared by gradual addition of 496 g. EtBr to 107 g. magnalium turnings (30% Mg, 70% Al) with I as catalyst. The mixture is then heated for 1 hr. at 120-40° and distilled XII b₂ 75°; the yield is 91%. When 150 g. XII is added to 50.3 g. Na ribbon and the mixture heated to 105°, a vigorous reaction sets in. After this has ceased 186 g. more XII is added, it is then heated first for 1 hr. at 110°, then for 16 hrs. at 200-10° and distilled at 2 mm. The distillate (107.4 g.) is retreated with Na and finally fractionated through a Podbielniak column. AlEt₃ b₅₀ 128-30°. When XI is treated with Na, XII, b₅₀ 147-8°, is formed. Treatment of MeAl sesquichloride and Na, followed by a treatment with Na-K (23% K) gives AlMe₃, b₇₅₅ 125-6°, in 63% yield. It crystallizes on cooling. Pri and magnalium give VIII, b_{4.2-4.7} 153-6°, in 66% yield.

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	252.69	431.68
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-63.20	-63.20

STN INTERNATIONAL LOGOFF AT 22:13:48 ON 28 MAR 2008